Scottish Universities Physics Alliance

Peer Reviewed Publications

2005
It was agreed by the Executive Committee of SUPA that a document should be produced each year listing articles published by SUPA staff in the previous calendar year. This is our first iteration and is intended to be used as a record in future discussions about SUPA.

In order to produce this document, each university was asked to provide a list of academic staff in post in 2005, including anyone who took up a post part way through the year and any who may have left during 2005. Information was gathered from the Web of Science and staff were given the opportunity to check this information for accuracy. They were also invited to write a short paragraph on their current work to be included in the document. Anna Clements at the University of St Andrews has collected similar data and has provided short paragraphs on current research for some of the staff at St Andrews.

In order to limit the number of publications appearing several times, any collaboration publications are listed under the collaboration title (at the end of the document) with a reference to the collaboration under the author’s entry.

Before we start on the document for 2006, we need to revisit the process used this year. The document for 2005 was produced with time constraints and limited staff, issues that will not affect the 2006 document. There was a misjudgement made in the data presented in that the name of the author was removed from the list of co-authors, leaving the references incomplete. In some subject areas, the order in which the authors appear is important. There are some inconsistencies with the data produced by the Web of Science and so the decision was taken to include only peer reviewed articles and conference proceedings that appear in standard journals. Next year we will endeavour to include articles such as review pieces in Science and Nature. We would also be keen to limit the duplication of work carried out within the universities. For the 2006 publication list we will look at the process used this year and, in consultation with the SUPA Executive Committee, make it both more efficient and more accurate.

Professor Ian G. Halliday
Chief Executive, Scottish Universities Physics Alliance
Abraham, E
Heriot-Watt University

Ackemann, T
University of Strathclyde, Department of Physics

*Transverse patterns and length-scale selection in vertical-cavity surface-emitting lasers with a large square aperture*
Schulz-Ruhtenberg, M; Babushkin, IV; Loiko, NA; Huang, KF
*APPLIED PHYSICS B-LASERS AND OPTICS*
Vol. 81, Is. 7, 945-953, 2005

*On the response of an oscillatory medium to defect generation*
Zhao, H; Friedrich, R;
*APPLIED PHYSICS B-LASERS AND OPTICS*
Vol. 81, Is. 7, 969-973, 2005

*Observation of a discrete family of dissipative solitons in a nonlinear optical system with a pitchfork bifurcation.*
Pesch, M; Grosse Westhoff, E; Ackemann, T; Lange, W
*PHYSICAL REVIEW LETTERS*
Vol. 95, 143906, 2005

*Parametric Data Analysis of Bistable Stochastic Systems*
Frank, T; Sondermann, M; Ackemann, T; Friedrich, R
*NONLINEAR PHENOMENA IN COMPLEX SYSTEMS*
Vol. 8, 193-199, 2005

*Dissipative Solitons in Pattern-forming Nonlinear Optical Systems: Cavity Solitons and Feedback Solitons*
Ackemann, T; Firth, WJ
*LECTURE NOTES IN PHYSICS*
Vol. 661, p. 55-100, 2005

Current Research
My research interest covers several aspects of “Nonlinear Photonics” in semiconductor-based devices (in particular VCSELs and VECSELs) and samples of laser-cooled atoms. Objectives are the understanding of the complex nonlinear processes determining the performance of photonic devices and lasers, their control, optimisation and applications as well as the utilization of nonlinearities for all-optical processing.
Ackland, GJ
University of Edinburgh

*Thermodynamically complete equations of state for nickel-titanium alloy*
Swift, DC; Niemczura, JG; Paisley, DL; Johnson, RP; Hauer, A; Hackenberg, RE; Cooley, J; Thoma, D
*JOURNAL OF APPLIED PHYSICS*
Vol. 98, Is. 9, 93512, 2005

*Effect of Fe segregation on the migration of a non-symmetric Sigma 5 tilt grain boundary in Al*
Mendelev, MI; Srolovitz, DJ; Han, S
*JOURNAL OF MATERIALS RESEARCH*
Vol. 20, Is. 1, 208-218, 2005

*Total energy calculation for high pressure selenium: the origin of incommensurate modulations in SeIV and the instability of proposed SeII*
Fox, H
*JOURNAL OF PHYSICS-CONDENSED MATTER*
Vol. 17, Is. 12, 1851-1859, 2005

*Stability of CrSi2 grown from the melt*
PHYSICAL REVIEW B
Vol. 71, Is. 1, 12106, 2005

*Simulation of martensitic microstructure*
*JOURNAL OF MATERIALS SCIENCE*
Vol. 40, Is. 12, 3205-3208, 2005

Current Research
I'm coordinating the EPSRC complexity research cluster Novel approaches to realistic networks of interacting autonomes, and seeking interested collaborators. I work on radiation damage in steels to determine better materials and safe lifetimes for fission and fusion reactors using molecular dynamics which can be imaged using BallViewer. I also work on density functional theory calculation of materials under extreme conditions of pressure, strain and irradiation, using codes developed over the past 15 years as part of UKCP.

Aliotta, M
University of Edinburgh

*Electron screening in d(d,p) in deuterated metals: temperature effects*
LUNA Collaboration
*JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS*
Vol. 31, Is. 11, 1141-1149, 2005

*Electron screening in Li-7(p, alpha)alpha and Li-6(p, alpha)He-3 for different environments*
LUNA Collaboration
PHYSICS LETTERS B
Multichannel R-matrix analysis of elastic and inelastic resonances in the Na-20,Na-21+p compound systems
Ruiz, C; Azuma, RE; Boyd, RN; Buchmann, L; Chen, A; Clarke, NM; D'Auria, JM; et al.
NUCLEAR PHYSICS A
Vol. 758, 166C-169C, 2005

Low-lying states in the unbound 11N nucleus
Casarejos, E; Angulo, C; Woods, PJ; Barker, FC; Descouvemont, P; et al.
PHYSICAL REVIEW C
73, 014319, 2005

Current Research
My research interests are in nuclear astrophysics, specifically in the experimental investigation of nuclear reactions which occur both during quiescent and explosive stages of stellar evolution. Recent investigations focused on the study of the electron screening effect, critical for quiescent nuclear burning, and on the study of some key reactions which trigger explosive phenomena such as novae and X-ray bursts.

Andersson, E
University of Strathclyde, Department of Physics

Joint measurements and Bell inequalities
Son, WM; Barnett, SM; Kim, MS
PHYSICAL REVIEW A
Vol. 72, Is. 5, 52116, 2005

Joint measurements of spin, operational locality, and uncertainty
Barnett, SM; Aspect, A
PHYSICAL REVIEW A
Vol. 72, Is. 4, 42104, 2005

Comparison of unitary transforms using Franson interferometry
Bergou, J; Jex, I
JOURNAL OF MODERN OPTICS
Vol. 52, Is. 10, 1485-1494, 2005

Cavity-state preparation using adiabatic transfer
Larson, J
PHYSICAL REVIEW A
Vol. 71, Is. 5, 53814, 2005

Current Research
My research concentrates on quantum information, quantum optics and quantum measurements, trying to bring quantum information theory closer to experimental applications. New quantum measurement strategies are useful for example in quantum
communication systems. My recent publications have addressed, among other issues, finding optimal minimum-error and maximum-confidence measurement strategies, and quantum public key distribution using coherent states.

Annand, JR
University of Glasgow

Measurement of the $G$ asymmetry for the gamma $p \rightarrow N \pi$ channels in the Delta(1232) resonance region
Ahrens, J; Altieri, S; Annand, JRM; Arends, HJ; Beck, R; Braghieri, A; d'Hose, N; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 26, Is. 1, 135-140, 2005

Near-threshold measurement of the $He-4(\gamma,n)$ reaction
Nilsson, B; Adler, JO; Andersson, BE; Annand, JRM; Akkurt, I; Boland, MJ; et al.
PHYSICS LETTERS B
Vol. 626, 65-71, 2005

Test of a bubble passive spectrometer for neutron dosimetry
Zanini, A; Fasolo, F; Visca, I; Durisi, E; Perosino, M; Annand, JRM; Burn, KW
PHYSICS IN MEDICINE AND BIOLOGY
Vol. 50, Is. 18, 4287-4297, 2005

Polarization transfer in proton Compton scattering at high momentum transfer
Hamilton, DJ; Mamyan, VH; Aniol, KA; Annand, JRM; Bertin, PY; Bimbot, I; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 24, 242001, 2005

Measurement of the electric form factor of the neutron at $Q(2)=0.3-0.8 (GeV/c)^2$
Glazier, DI; Seimetz, M; Annand, JRM; Arenhovel, H; Antelo, MA; Ayerbe, C; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 24, Is. 1, 101-109, 2005

Measurement of the $pi(+)\text{-meson polarizabilities via the gamma } P \rightarrow gamma pi(+)n$ reaction
Ahrens, J; Alexeev, VM; Annand, JRM; Arends, HJ; Beck, R; Caselotti, G; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 23, Is. 1, 113-127, 2005

And GDH Collaboration, A2 Collaboration

Current Research
Tagged-photon measurements (Mainz) of magnetic moments of P33 and S11 baryon resonances via radiative decay of the resonance. Measurements (Jefferson Lab Hall-A) of the neutron charge form factor at high $Q^2$, neutron transversity and $H(e,e'p)\pi^0$ close to threshold (ChPT test). Tagged-photon measurements (MAX-lab Lund) of Compton scattering on the deuteron and photodisintegration of $^3,^4\text{He}$ close to threshold. Low energy neutron photoproduction for medical applications.
Anthony, I  
University of Glasgow

Arnold, A  
University of Strathclyde

Current Research  
Aidan Arnold is interested in experimental and theoretical atom optics. He has theoretically investigated aberration minimisation in magnetic lenses, to enhance microtrap loading. He developed the world's second cold atom storage ring in 2002, the first Scottish Bose-Einstein condensate (BEC) in 2003, and one of the world's two BEC storage ring experiments in 2005. Future directions: interferometry and advanced holography with BECs.

Bacon, DJ  
University of Edinburgh

Evolution of the dark matter distribution with three-dimensional weak lensing  
Taylor, AN; Brown, ML; Gray, ME; Wolf, C; Meisenheimer, K; Dye, S; Wisotzki, L; Borch, A; Kleinheinrich, M  
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY  
Vol. 363, Is. 3, 723-733, 2005

An enlarged cosmic shear survey with the William Herschel Telescope  
Massey, R; Refregier, A; Ellis, R; Brown, ML  
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY  
Vol. 359, Is. 4, 1277-1286, 2005

Galaxy-galaxy flexion: Weak lensing to second order  
Goldberg, DM  
ASTROPHYSICAL JOURNAL  
Vol. 619, Is. 2, Part 1, 741-748, 2005

Badnell, N  
University of Strathclyde, Department of Physics

Electron-ion recombination of Be-like C, N, and O  
Fogle, M; Glans, P; Loch, SD; Madzunkov, S; Abdel-Naby, SA; Pindzola, MS; Schuch, R  
ASTRONOMY & ASTROPHYSICS  
Vol. 442, Is. 2, 757-766, 2005

The agreement of Breit-Pauli and Dirac R-matrix collision strengths for iron peak elements: an Fe14+ case study  
Berrington, KA; Ballance, CP; Griffin, DC;
**Baker, H**
Heriot-Watt University

CO2 laser processing of alumina (Al2O3) printed circuit board substrates
Moorhouse, CJ; Villarreal, F; Wendland, JJ; Hall, DR; Hand, DP
IEEE TRANSACTIONS ON ELECTRONICS PACKAGING MANUFACTURING
Vol. 28, Is. 3, 249-258, 2005

**Ball, RD**
University of Edinburgh

Current Research
I work on the prediction of Standard Model processes at future colliders. In particular I use perturbative QCD to extrapolate from the HERA kinematic region to that of the LHC, in order to compute cross-sections for Drell-Yan, W, Z and Higgs production. To do this reliably requires the combined resummation of collinear and small x logarithms.

**Barker, P**
Heriot-Watt University

Super-Gaussian mirror for high-field-seeking molecules
Dong, GJ; Edvadsson, S; Lu, WP;
PHYSICAL REVIEW A
Vol. 72, Is. 3, 31605, 2005

Enhanced cooling of atoms within an optical cavity
Lu, W;
PHYSICAL REVIEW A
Vol. 72, Is. 2, 25402, 2005
Optical Landau damping
Shneider, MN;
PHYSICAL REVIEW A
Vol. 71, Is. 5, 53403, 2005

Focusing ground-state xenon in a pulsed optical field
Fulton, R; Bishop, AI
PHYSICAL REVIEW A
Vol. 71, Is. 4, 43404, 2005

Cold molecules in pulsed optical lattices
Dong, GJ; Lu, WP; Barker, PF; Shneider, MN
PROGRESS IN QUANTUM ELECTRONICS
Vol. 29, Is. 1, 1-58, 2005

Current Research
Research involves the manipulation and trapping of molecules and atoms using high intensity optical fields. Currently we study the focusing of molecules and atoms, and the transport of these species within periodic optical fields. This includes the creation of stationary cold molecules by deceleration in optical lattices, and the study of molecular motion within these structures using coherent light scattering.

Barnett, SM
University of Strathclyde, Department of Physics

Large-uncertainty intelligent states for angular momentum and angle
Gotte, JB; Zambrini, R; Franke-Arnold, S
JOURNAL OF OPTICS B-QUANTUM AND SEMICLASSICAL OPTICS
Vol. 7, Is. 12, S563-S571, 2005

Joint measurements and Bell inequalities
Son, WM; Andersson, E; Kim, MS
PHYSICAL REVIEW A
Vol. 72, Is. 5, 52116, 2005

Joint measurements of spin, operational locality, and uncertainty
Andersson, E; Aspect, A
PHYSICAL REVIEW A
Vol. 72, Is. 4, 42104, 2005

Quantum theory of matter-wave detection
Whitlock, NK; Cresser, JD; Jeffers, J
JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS
Vol. 38, Is. 17, 3117-3128, 2005

Quantum theory of friction
Cresser, JD
PHYSICAL REVIEW A
Vol. 72, Is. 2, 22107, 2005

Radiation pressure and momentum transfer in dielectrics: The photon drag effect
Loudon, R; Baxter, C
PHYSICAL REVIEW A
Vol. 71, Is. 6, 63802, 2005

Momentum paradox in a vortex core
Zambrini, R; Thomson, LC; Padgett, M
JOURNAL OF MODERN OPTICS
Vol. 52, Is. 8, 1135-1144, 2005

Minimum uncertainty states of angular momentum and angular position
Pegg, DT; Zambrini, R; Franke-Arnold, S; Padgett, M
NEW JOURNAL OF PHYSICS
Vol. 7, 62, 2005

Local transfer of optical angular momentum to matter
Zambrini, R; Barnett, SM
JOURNAL OF MODERN OPTICS
Vol. 52, Is. 8, 1045-1052, 2005

Current Research
My current research interests are in quantum information (especially measurement theory), cold gasses, optical angular momentum and other mechanical properties of light.

Barton, JS
Heriot-Watt University

The effects of progressive wear on the frequency characteristic of acoustic emission acquired during face milling
Jakobsen, ML; Wilkinson, P; Reuben, RL; Harvey, D; Jones, JDC
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART B-JOURNAL OF ENGINEERING MANUFACTURE
Vol. 219, Is. 11, 803-810, 2005

Strain and temperature sensitivity of a single-mode polymer optical fiber
Silva-Lopez, M; Fender, A; MacPherson, WN; Jones, JDC
OPTICS LETTERS
Vol. 30, Is. 23, 3129-3131, 2005

Transverse load and orientation measurement with multicore fiber Bragg gratings
Silva-Lopez, M; MacPherson, WN; Li, C; Moore, AJ; Jones, JDC; Zhao, DH; Zhang, L; Bennion, I
APPLIED OPTICS
Vol. 44, Is. 32, 6890-6897, 2005
Component position measurement through polymer material by broadband absolute distance interferometry
Harrison, PB; Maier, RRJ; Jones, JDC; McCulloch, S; Burnell, G
MEASUREMENT SCIENCE & TECHNOLOGY
Vol. 16, Is. 10, 2066-2071, 2005

Current Research
Optical fibre measurement techniques in engineering applications, comprising interferometry, Bragg and long period fibre gratings in conventional and multicore fibre, and fluorescence. Applications include pressure sensors for shock wave research, component shape and position monitoring, gas detection and screening of medical instruments.

Bates, RL
University of Glasgow

Design and performance of the ABCD3TA ASIC for readout of silicon strip detectors in the ATLAS semiconductor tracker
Campabadal, F; Fleta, C; Key, M; Lozano, M; Martinez, C; Pellegrini, G; Rafi, JM; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 552, Is. 3, 292-328, 2005

Recent advancements in the development of radiation hard semiconductor detectors for S-LHC
Fretwurst, E; Adey, J; Al-Ajili, A; Alfieri, G; Allport, PP; Artuso, M; Assouak, S; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 552, Is. 01-Feb, 7-19, 2005

Development of radiation tolerant semiconductor detectors for Super-LHC
Moll, M; Adey, J; Al-Ajili, A; Alfieri, G; Allport, PP; Artuso, M; Assouak, S; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 01-Feb, 99-107, 2005

Radiation-hard semiconductor detectors for SuperLHC
Bruzzi, M; Adey, J; Al-Ajili, A; Alexandrov, P; Alfieri, G; Allport, PP; Andreazza, A; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 541, Is. 01-Feb, 189-201, 2005

Beam tests of ATLAS SCT silicon strip detector modules
Campabadal, F; Fleta, C; Key, M; Lozano, M; Martinez, C; Pellegrini, G; Rafi, JM; et al.
Bates, SP
University of Edinburgh

Structure and dynamics of water in aqueous methanol
Nieto-Draghi, C; Hargreaves, RP
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 45, S3265-S3272, 2005

Liquid NMA: A surprisingly realistic model for hydrogen bonding motifs in proteins
Whitfield, TW; Martyna, GJ; Allison, S; Crain, J
CHEMICAL PHYSICS LETTERS
Vol. 414, Is. 01-Mar, 210-214, 2005

Segregation in aqueous methanol enhanced by cooling and compression
Dougan, L; Hargreaves, R; Finney, JL; Reat, V; Soper, AK; Crain, J
JOURNAL OF CHEMICAL PHYSICS
Vol. 122, Is. 17, 174514, 2005

Adsorption and structure of hydrocarbons in MCM-41: a computational study
Fox, JPP
LANGMUIR
Vol. 21, Is. 10, 4746-4754, 2005

Clustering and microimmiscibility in alcohol-water mixtures: Evidence from molecular-dynamics simulations
Allison, SK; Fox, JP; Hargreaves, RP
PHYSICAL REVIEW B
Vol. 71, Is. 2, 24201, 2005

Current Research
Current research interests involve the study of the structure, dynamics and properties of simple liquid mixtures of biologically-relevant molecules in the aqueous environment using molecular simulation methods, principally classical and ab initio molecular dynamics techniques.
Current systems under study include aqueous peptidic fragments, amino acids and alcohols.
Berera, A
University of Edinburgh

Galilean invariance and homogeneous anisotropic randomly stirred flows
Hochberg, D
PHYSICAL REVIEW E
Vol. 72, Is. 5, Part 2, 57301, 2005

Sneutrino warm inflation in the minimal supersymmetric model
Bastero-Gil, M
PHYSICAL REVIEW D
Vol. 72, Is. 10, 103526, 2005

Determining the regimes of cold and warm inflation in the supersymmetric hybrid model
Bastero-Gil, M
PHYSICAL REVIEW D
Vol. 71, Is. 6, 63515, 2005

Absence of isentropic expansion in various inflation models
Ramos, RO
PHYSICS LETTERS B
Vol. 607, Is. 01-Feb, 1-7, 2005

Dynamics of interacting scalar fields in expanding space-time
Ramos, RO
PHYSICAL REVIEW D
Vol. 71, Is. 2, 23513, 2005

Inflation in the warm and cold regimes
Berera, A
GRAVITATION AND COSMOLOGY
Vol. 11, 51-61 2005

Current Research
My research interests are in early universe particle cosmology and nonequilibrium quantum field theory. I am specifically interested in dissipative mechanisms during the cosmic inflation period, including both first principles origin of such effects and implications of such effects on particle physics supersymmetry model building. I am also interested in cosmic magnetic and fluid dynamics, using renormalization group and field theoretic methods.

Best, PN
University of Edinburgh

Radio source properties and the alignment effect
Inskip, KJ; Longair, MS
BALTIC ASTRONOMY
Vol. 14, Is. 3, 378-380, 2005
Current Research
My research is in Condensed Matter Theory with emphasis in strongly correlated systems. The most recent projects are:
- The possibility of fractional charge in lattices with frustrated geometry.
- A new phase transition at the surface of the antiferromagnet uranium dioxide.
- Fundamental questions on multiferroics (materials that develop magnetization coupled with electric polarization).
- Properties of the Landau-Fermi liquid theory.

**Bingham, R**

University of Strathclyde, Department of Physics

*A cyclotron maser instability with application to space and laboratory plasmas*
Cairns, RA; Speirs, DC; Ronald, K; Vorgul, I; Kellett, BJ; Phelps, ADR; Bingham, R
PHYSICA SCRIPTA
Vol. T116, 23-26, 2005

*A quasi-particle approach to modulational instabilities in wave-plasma interactions*
Trines, R; Bingham, R; Silva, LO; Mendonca, JT; Shukla, PK; Mori, AB
PHYSICA SCRIPTA
Vol. T116, 75-78, 2005

*X-ray emission from comets and nonmagnetic planets. Theory and comparison with CHANDRA observations*
Shapiro, VD; Bingham, R; Kellett, BJ; Quest, K; Mendis, DA; Bryans, P; Torney, M; Summers, HP
PHYSICA SCRIPTA
Vol. T116, 83-87, 2005

*The search for quantum gravity using matter interferometers*
Bingham, R
PHYSICA SCRIPTA
Vol. T116, 132-134, 2005

*A coupled two-step plasma instability in PW laser plasma interactions*
Mendonca, JT; Norreys, P; Bingham, R; Davies, JR
PLASMA PHYSICS AND CONTROLLED FUSION
Vol. 47, B799-B805, 2005

*Analysis of a cyclotron maser instability in cylindrical geometry*
Vorgul, I; Cairns, RA; Bingham, R
PHYSICS OF PLASMAS
Vol. 12, 122903, 2005

*Wave kinetic treatment of forward four-wave stimulated scattering instabilities*
Bingham, R; Silva, LO; Trines, RMGM; Mendonca, JT; Shukla, PK; Mori, WB; Cairns, RA
JOURNAL OF PLASMA PHYSICS
Vol. 71, Part 6, 899-904, 2005

*A kinetic approach to Bose-Einstein condensates: Self-phase modulation and Bogoliubov oscillations*
Mendonca, JT; Bingham, R; Shukla, PK
Large amplitude solitary magnetized plasma waves
Nairn, CMC; Bingham, R; Allen, JE
JOURNAL OF EXPERIMENTAL AND THEORETICAL PHYSICS
Vol. 101, Is. 5, 942-948, 2005

A laboratory experiment to investigate auroral kilometric radiation emission mechanisms
Speirs, DC; Vorgul, I; Ronald, K; Bingham, R; Cairns, RA; Phelps, ADR; Kellett, BJ; Cross, AW; Whyte, CG; Robertson, C
JOURNAL OF PLASMA PHYSICS
Vol. 71, Part 5, 631-643, 2005

Beam instabilities in laser-plasma interaction: Relevance to preferential ion heating
Mendonca, JT; Norreys, P; Bingham, R; Davies, JR
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 24, 245002, 2005

Wakefield of Bose-Einstein condensates in a background thermal gas
Mendonca, JT; Shukla, PK; Bingham, R
PHYSICS LETTERS A
Vol. 340, 355-360, 2005

Quasiparticle approach to the modulational instability of drift waves coupling to zonal flows
Trines, R; Bingham, R; Silva, LO; Mendonca, JT; Shukla, PK; Mori, WB
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 16, 165002, 2005

High velocity clouds interacting with galactic halo plasma as a source of X-ray emission
Kellett, BJ; Bingham, R
JOURNAL OF PLASMA PHYSICS
Vol. 71, Part 2, 111-118, 2005

Parametric excitation of neutrino pairs by electron plasma waves
Mendonca, JT; Serbeto, A; Bingham, R; Shukla, PK
JOURNAL OF PLASMA PHYSICS
Vol. 71, Part 2, 119-125, 2005

Efficiency and energy spread in laser-wakefield acceleration
Reitsma, AJW; Cairns, RA; Bingham, R; Jaroszynski, DA
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 8, 85004, 2005

A new diagnostic for very high magnetic fields in expanding plasmas
Eliezer, S; Mendonca, JT; Bingham, R; Norreys, P
PHYSICS LETTERS A
Vol. 336, 390-395, 2005
Current Research
My research topics include theoretical plasma physics, plasma accelerators and radiation sources, neutrino astrophysics and supernovae explosions, turbulence in both plasmas and atmospheres, non-linear physics, laser plasma interactions, space plasma physics and astroplasma physics.

Binoth, T
University of Edinburgh

Gluon-induced WW background to Higgs boson searches at the LHC
Ciccolini, M; Kauer, N; Kramer, M
JOURNAL OF HIGH ENERGY PHYSICS
Is. 3, 65, 2005

An algebraic/numerical formalism for one-loop multi-leg amplitudes
Binoth, T; Guillet, JP; Heinrich, G; Pilon, E; Schubert, C
JOURNAL OF HIGH ENERGY PHYSICS
Is.10, 15, 2005

Current Research
My current research is centered around precision phenomenology for the LHC. To allow for precise predictions for multi-particle signal and background reactions, scattering amplitudes have to be known at least on the one-loop level. I have designed efficient algebraic/numerical methods to accomplish this task and apply them to processes relevant for Higgs and beyond Standard Model physics.

Birch, DJS
University of Strathclyde, Department of Physics

Metabolic sensing using fluorescence
Ganesan, A; Karolin, J
SYNTHETIC METALS
Vol. 155, Is. 2, 410-413, 2005

Glucose-dependent changes in NAD(P)H-related fluorescence lifetime of adipocytes and fibroblasts in vitro: Potential for non-invasive glucose sensing in diabetes mellitus
Evans, ND; Gnudi, I; Rolinski, OJ; Pickup, JC
JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY B-BIOLOGY
Vol. 80, Is. 2, 122-129, 2005

Selective excitation of tryptophan fluorescence decay in proteins using a subnanosecond 295 nm light-emitting diode and time-correlated single-photon counting
McGuinness, CD; Sagoo, K; McLoskey, D
APPLIED PHYSICS LETTERS
Vol. 86, Is. 26, 261911, 2005
**Scintillators based on aromatic dye molecules doped in a sol-gel glass host**
Nikl, M; Solovieva, N; Apperson, K; Voloshinovskii, A
APPLIED PHYSICS LETTERS
Vol. 86, Is. 10, 101914, 2005

**Glucose sensing based on the intrinsic fluorescence of sol-gel immobilized yeast hexokinase**
Hussain, F; Pickup, JC
ANALYTICAL BIOCHEMISTRY
Vol. 339, Is. 1, 137-143, 2005

**Fluorescence nanotomography: recent progress, constraints and opportunities**
Rolinski OJ
Chapter 4 in: O.S.Wolfbeis, M.Hof, R.Hutterer and V.Fidler (eds),
FLUORESCENCE SPECTROSCOPY, IMAGING AND PROBES, SPRINGER SERIES ON FLUORESCENCE AND APPLICATIONS
Vol.3, 56-70, 2005

**Fluorescence-based glucose sensors**
Pickup JC, Hussain F, Evans ND, Rolinski OJ
BIOSENSORS & BIOELECTRONICS
Vol 20, 2555-65, 2005

**Current Research**
Molecular dynamics and structure studied using the fluorescence lifetime photophysics of ensembles and single molecules. This includes characterisation and control of sol-gel nanoparticle/nanopore formation, detection of medically important metabolites such as glucose, proteins, metal ions etc and miniaturised sensor schemes based on combinations of these areas. The approach centres on exploring new avenues of biomedical application for fundamental molecular photophysics.

**Bonnell, IA**
University of St Andrews

**Binary systems and stellar mergers in massive star formation**
Bate, MR
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 362, Is. 3, 915-920, 2005

**The onset of collapse in turbulently supported molecular clouds**
Clark, PC
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 361, Is. 1, 2-16, 2005

**Centrally condensed turbulent cores: massive stars or fragmentation?**
Dobbs, CL; Clark, PC
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 360, Is. 1, 2-8, 2005
Current Research
I am primarily interested in the dynamics of star formation and of young stellar systems. Most stars form in groups that consist of anywhere from two (binary systems) to thousands (clusters) of stars. These stars interact during their formation and early evolution such that the interactions are a prime candidate for determining many of the observed stellar properties.

Boyle, P
University of Edinburgh

Overview of the QCDSP and QCDOC computers
Chen, D; Christ, NH; Clark, MA; Cohen, SD; Cristian, C; Dong, Z; Gara, A; et al.
IBM JOURNAL OF RESEARCH AND DEVELOPMENT

The QCDOC project
Chen, D; Christ, N; Clark, M; Cohen, S; Cristian, C; Dong, Z; Gara, A; Joo, B; et al.
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 169-175, 2005

The status of user software on QCDOC
Chen, D; Christ, NH; Clark, M; Cohen, SD; Cristian, C; Dong, Z; Gara, A; Joo, B; et al.
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 829-831, 2005

Brand, PW
University of Edinburgh

A simple model for H-2 line profiles in bow shocks
Schultz, ASB; Burton, MG
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 358, Is. 4, 1195-1214, 2005
Branford, D  
University of Edinburgh

*Beam-helicity asymmetries in double-charged-pion photoproduction on the proton*  
Strauch, S; Berman, BL; Adams, G; Ambrozewicz, P; Anghinolfi, M; et al.  
PHYSICAL REVIEW LETTERS  
Vol. 95, Is. 16, 162003, 2005

*Exclusive photoproduction of the cascade (Xi) hyperons*  
Price, JW; Nefkens, BMK; Ducote, JL; Goetz, JT; Adams, G; Ambrozewicz, P; et al.  
PHYSICAL REVIEW C  
Vol. 71, Is. 5, 58201, 2005

*Comparison between the transverse responses of the reactions C-12(e, e'(p))B-11 and C-12(gamma, p)B-11*  
Morrow, SA; Arneil, J; Aschenauer, EC; van Batenburg, MF; Blok, HP; et al.  
PHYSICAL REVIEW C  
Vol. 71, Is. 1, 14607, 2005

*Exclusive rho(0) meson electroproduction from hydrogen at CLAS*  
Hadjidakis, C; Guidal, M; Garcon, M; Laget, JM; Smith, ES; Vanderhaeghen, M; et al.  
PHYSICS LETTERS B  
Vol. 605, Is. 38810, 256-264, 2005

*Investigation of the use of a stacked HpGe detector for improving gamma ray spectra at energies above similar to 2 MeV*  
Smillie, DG; Fohl, K  
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT  
Vol. 536, Is. 38749, 131-135, 2005

And CLAS Collaboration

Brown, CTA  
University of St Andrews

*Yb3+-doped YVO4 crystal for efficient Kerr-lens mode locking in solid-state lasers*  
Lagatsky, AA; Sarmani, AR; Sibbett, W; Kisel, VE; Selivanov, AG; Denisov, IA; Troshin, AE; Yumashev, KV; Kuleshov, NV; Matrosov, VN; Matrosova, TA; Kupchenko, MI  
OPTICS LETTERS  
Vol. 30, Is. 23, 3234-3236, 2005

*Low-loss GaInNAs saturable Bragg reflector for mode-locking of a femtosecond Cr4+: Forsterite-laser*  
McWilliam, A; Lagatsky, AA; Lebum, CG; Fischer, P; Valentine, GJ; Kemp, AJ; Calvez, S; Burns, D; Dawson, MD; Pessa, M; Sibbett, W  
IEEE PHOTONICS TECHNOLOGY LETTERS  
Vol. 17, Is. 11, 2292-2294, 2005
White light propagation invariant beams  
Fischer, P; Morris, JE; Lopez-Mariscal, C; Wright, EM; Sibbett, W; Dholakia, K  
OPTICS EXPRESS  
Vol. 13, Is. 17, 6657-6666, 2005

Broad tunability from a compact, low-threshold Cr: LiSAF laser incorporating an improved birefringent filter and multiple-cavity Gires-Tournois interferometer mirrors  
Stormont, B; Kemp, AJ; Cormack, IG; Agate, B; Sibbett, W  
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS  
Vol. 22, Is. 6, 1236-1243, 2005

Efficient femtosecond green-light source with a diode-pumped mode-locked Yb3+: KY(WO4)2 laser  
Lagatsky, AA; Rafailov, EU; Sarmani, AR; Sibbett, W; Ming, L; Smith, PGR  
OPTICS LETTERS  
Vol. 30, Is. 10, 1144-1146, 2005

1.36-Tb/s spectral slicing source based on a Cr4+: YAG femtosecond laser  
Chai, YJ; Leburn, CG; Lagatsky, AA; Penty, RV; White, IH; Sibbett, W  
JOURNAL OF LIGHTWAVE TECHNOLOGY  
Vol. 23, Is. 3, 1319-1324, 2005

Photoporation and cell transfection using a violet diode laser  
Paterson, L; Agate, B; Comrie, M; Ferguson, R; Lake, TK; Morris, JE; Carruthers, AE; Sibbett, W; Bryant, PE; Gunn-Moore, F; Riches, AC; Dholakia, K  
OPTICS EXPRESS  
Vol. 13, Is. 2, 595-600, 2005

Brown, JC  
University of Glasgow

Problems and progress in flare fast particle diagnostics  
Kontar, EP  
ENERGY RELEASE AND PARTICLE ACCELERATION AT THE SUN AND IN THE HELIOSPHERE  
Vol. 35, Is. 10, 1675-1682, 2005

Determination of electron flux spectra in a solar flare with an augmented regularization method: Application to RHESSI data  
Kontar, EP; Emslie, AG; Piana, M; Massone, AM  
SOLAR PHYSICS  
Vol. 226, Is. 2, 317-325, 2005

Physics of the Neupert effect: Estimates of the effects of source energy, mass transport, and geometry using RHESSI and GOES data  
Veronig, AM; Dennis, BR; Schwartz, RA; Sui, L; Tolbert, AK  
ASTROPHYSICAL JOURNAL  
Vol. 621, Is. 1, Part 1, 482-497, 2005
Applications of a phoswich-based detector for fast (similar to 1-10 MeV) solar neutrons for missions to the inner heliosphere
McKibben, RB; Connell, JJ; Macri, JR; McConnell, ML; Ryan, JM; Fluckiger, EO; Moser, MR; Brown, JC; McKinnon, AL
SOLAR ENCOUNTER, SOLAR-B AND STEREO ADVANCES IN SPACE RESEARCH
Vol. 36, Is. 8, 1432-1438, 2005

Current Research
My current main research interests span solar physics, hot star mass loss and inverse problems in astronomy. More specifically I am working on: theory and radiation diagnostics of energetic flare particles; the role of microflares in coronal heating; (both utilising NASA RHESSI data; mechanisms for/data modelling of hot star disk production.

Brown, R
University of Strathclyde, Department of Physics

Buller, G
Heriot-Watt University

Multiple wavelength time-of-flight sensor based on time-correlated single-photon counting
Harkins, RD; McCarthy, A; Hiskett, PA; MacKinnon, GR; Smith, GR; Sung, R; Wallace, AM; Lamb, RA; Ridley, KD; Rarity, JG
REVIEW OF SCIENTIFIC INSTRUMENTS
Vol. 76, Is. 8, 83112, 2005

Multi-spectral laser detection and ranging for range profiling and surface characterization
Wallace, AM; Sung, RCW; Harkins, RD; McCarthy, A; Hernandez-Marin, S; Gibson, GJ; Lamb, R
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, S438-S444, 2005

Operation of an optoelectronic crossbar switch containing a terabit-per-second free-space optical interconnect
Walker, AC; Fancey, SJ; Desmulliez, MPY; Forbes, MG; Casswell, JJ; et al.
IEEE JOURNAL OF QUANTUM ELECTRONICS
Vol. 41, Is. 7, 1024-1036, 2005

Observation of the biexponential ground-state decay time behavior in InAs self-assembled quantum dots grown on misoriented substrates
Shkolnik, AS; Karachinsky, LY; Gordeev, NY; Zegrya, GG; Evtikhiev, VP; Pellegrini, S
APPLIED PHYSICS LETTERS
Vol. 86, Is. 21, 211112, 2005

Quantum key distribution system clocked at 2 GHz
Gordon, KJ; Fernandez, V; Rech, I; Cova, SD; Townsend, PD
OPTICS EXPRESS
Vol. 13, Is. 8, 3015-3020, 2005

Excitonic signatures in the photoluminescence and terahertz absorption of a GaAs/AlxGa1-xAs multiple quantum well
Galbraith, I; Chari, R; Pellegrini, S; Phillips, PJ; Dent, CJ; van der Meer, AFG; et al.
PHYSICAL REVIEW B
Vol. 71, Is. 7, 73302, 2005

Current Research
Gerald Buller’s group researches time-correlated photon-counting detection and applications. The group is actively pursuing research in single-photon avalanche diode detectors for single-photon detection at wavelengths greater than 1000nm. The photon-counting applications researched include time-resolved measurements of semiconductor nanostructures, including quantum dot microresonator single-photon sources; time-of-flight ranging and imaging; optical fibre-based quantum key distribution networks.

Burns, D
University of Strathclyde, Institute of Photonics

Low-loss GaInNAs saturable Bragg reflector for mode-locking of a femtosecond Cr4+: Forsterite-laser
McWilliam, A; Lagatsky, AA; Lebum, CG; Fischer, P; Brown, CTA; Valentine, GJ; Kemp, AJ; Calvez, S; Dawson, MD; Pessa, M; Sibbett, W
IEEE PHOTONICS TECHNOLOGY LETTERS
Vol. 17, Is. 11, 2292-2294, 2005

Modeling and experimental investigation of a diode-pumped Tm : YAlO(3) Laser with a- and b-cut crystal orientations
Cerny, P;
IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS
Vol. 11, Is. 3, 674-681, 2005

Exploration of the optimisation algorithms used in the implementation of adaptive optics in confocal and multiphoton microscopy
Wright, AJ; Patterson, BA; Poland, SP; Valentine, GJ; Girkin, JM
MICROSCOPY RESEARCH AND TECHNIQUE
Vol. 67, Is. 1, 36-44, 2005

Thermal management in vertical-external-cavity surface-emitting lasers: Finite-element analysis of a heatspreader approach
Kemp, AJ; Valentine, GJ; Hopkins, JM; Hastie, JE; Smith, SA; Calvez, S; Dawson, MD;
IEEE JOURNAL OF QUANTUM ELECTRONICS
Vol. 41, Is. 2, 148-155, 2005

Progress towards high power, high brightness neodymium-based thin-disk lasers
Kemp, A.J., G.J. Valentine, and D. Burns,
PROGRESS IN QUANTUM ELECTRONICS
Current Research
Dr Burns heads up the All-Solid-State Laser Development Team. This team specialises in the science, technology and engineering of all-solid-state light sources particularly short-pulse systems for practical applications, as well as adaptive optics, mid-IR sources and VECSEL sources.

Bussey, PJ
University of Glasgow

ZEUS Collaboration, CDF Collaboration

Current Research
I lead the Glasgow group on the ZEUS experiment at DESY, Hamburg, researching into the interactions of high energy electrons and positrons with protons. I am also a member of the CDF Collaboration at Fermilab, USA, where the world's highest energy accelerator collides protons with antiprotons. For the future, I am helping to plan an experiment at CERN on the diffractive production of Higgs particles.

Buttar, CM
University of Glasgow

Recent advancements in the development of radiation hard semiconductor detectors for S-LHC
Fretwurst, E; Adey, J; Al-Ajili, A; Alfieri, G; Allport, PP; Artuso, M; Assouak, S; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 552, Is. 1/2/2006, 7-19, 2005

Development of radiation tolerant semiconductor detectors for the Super-LHC
Moll, M; Adey, J; Al-Ajili, A; Alfieri, G; Allport, PP; Artuso, M; Assouak, S; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT

Radiation-hard semiconductor detectors for SuperLHC
Bruzzi, M; Adey, J; Al-Ajili, A; Alexandrov, P; Alfieri, G; Allport, PP; Andreazza, A; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 541, Is. 1/2/2006, 189-201, 2005

Beam tests of ATLAS SCT silicon strip detector modules
Campabadal, F; Fleta, C; Key, M; Lozano, M; Martinez, C; Pellegrini, G; Rafi, JM; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT

Cagnoli, G
University of Glasgow

The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

Hydroxide-catalysis bonding for stable optical systems for space
Elliffe, EJ; Bogenstahl, J; Deshpande, A; Hough, J; Killow, C; Reid, S; Robertson, D; Rowan, S; Ward, H
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

And LIGO Scientific Collaboration

Cameron, AC
University of St Andrews

Results from the Wide Angle Search for Planets Prototype (WASP0) - III. Planet hunting in the Draco field
Kane, SR; Horne, K; James, D; Lister, TA; Pollacco, DL; Street, RA; Tsapras, Y
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 364, Is. 3, 1091-1103, 2005

Results from the wide angle search for planets prototype (WASP0) - II. Stellar variability in the Pegasus field
Kane, SR; Lister, TA; Horne, K; James, D; Pollacco, DL; Street, RA; Tsapras, Y
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 362, Is. 1, 117-126, 2005

A dearth of planetary transits in the direction of NGC 6940
Hood, B; Kane, SR; Bramich, DM; Horne, K; Street, RA; Bond, IA; Penny, AJ; Tsapras, Y; Quirrenbach, A; Safizadeh, N; Mitchell, D; Cooke, J
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 360, Is. 2, 791-800, 2005

A survey for planetary transits in the field of NGC 7789
Bramich, DM; Horne, K; Bond, IA; Street, RA; Hood, B; Cooke, J; James, D; Lister, TA; Mitchell, D; Pearson, K; Penny, A; Quirrenbach, A; Safizadeh, N; Tsapras, Y
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Variable stars in the field of open cluster NGC 6819 - II
Street, RA; Horne, K; Lister, TA; Penny, A; Tsapras, Y; Quirrenbach, A; Safizadeh, N; Cooke, J; Mitchell, D
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 358, Is. 3, 795-812, 2005

Inferring coronal structure from X-ray light curves and Doppler shifts: A Chandra study of AB Doradus
Hussain, GAJ; Brickhouse, NS; Dupree, AK; Jardine, MM; van Ballegooijen, AA; Hoogerwerf, R; Donati, JF; Favata, F
ASTROPHYSICAL JOURNAL
Vol. 621, Is. 2, Part 1, 999-1008, 2005

Direct evidence for a polar spot on SV Camelopardalis
Jeffers, SV; Barnes, JR; Aufdenberg, JP; Hussain, GAJ
ASTROPHYSICAL JOURNAL
Vol. 621, Is. 1, Part 1, 425-431, 2005

LO Peg in 1998: star-spot patterns and differential rotation
Barnes, JR; Lister, TA; Pointer, GR; Still, MD
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, Is. 4, 1501-1508, 2005

Current Research
- Discovery and characterization of extra-solar planets via SuperWASP transit surveys and reflected-light tomography.
- Tomographic mapping of magnetic fields and differential rotation patterns on protostars.
- Determining whether magnetic star-disc interactions halt orbital migration of giant exoplanets.
- Participation in missions to search for Earth-mass extra-solar planets via transit method.

Campbell, DM
University of Edinburgh

Investigation of silo honking: Slip-stick excitation and wall vibration
Buick, JM; Chavez-Sagarnaga, J; Zhong, Z; Ooi, JY; Pankaj; Greated, CA
JOURNAL OF ENGINEERING MECHANICS-ASCE
Vol. 131, Is. 3, 299-307, 2005
Cantley, CA
University of Glasgow

*The status of GEO 600*
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, S193-S198, 2005

And **LIGO Scientific** Collaboration

Current Research
Experimental physics research towards the detection of gravitational waves. Development of low thermal noise vibration isolation systems for advanced gravitational wave detectors, e.g. Advanced LIGO in the US. Development of techniques using CO2 laser radiation for fabrication and welding of silica ribbons and fibres for monolithic mirror suspension stages. Glasgow Project Manager for the UK Advanced LIGO Project.

Cassettari, D
University of St Andrews

Current Research
Donatella's expertise is in the area of Bose-Einstein condensation in dilute atomic gases. When a cloud of bosonic atoms is cooled below a critical temperature, a phase transition occurs that causes the atoms to 'condense' into the same quantum state. A condensate can be thought of as a new state of matter in which the atoms behave as a single quantum mechanical entity. It is a promising system for the study of strongly correlated many-body quantum mechanics and for the implementation of quantum information processing with neutral atoms.

Cates, ME
University of Edinburgh

*Colloid-stabilized emulsions: behaviour as the interfacial tension is reduced*
Clegg, PS; Herzig, EM; Schofield, AB; Horozov, TS; Binks, BP; Poon, WCK
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 45, S3433-S3438, 2005

*Colloidal jamming at interfaces: A route to fluid-bicontinuous gels*
Stratford, K; Adhikari, R; Pagonabarraga, I; Desplat, JC
SCIENCE
Vol. 309, Is. 5744, 2198-2201, 2005

*Colloidal arrest by capillary forces*
Adhikari, R; Stratford, K
Physical and computational scaling issues in lattice Boltzmann simulations of binary fluid mixtures
Desplat, JC; Stansell, P; Wagner, AJ; Stratford, K; Adhikari, R; Pagonabarraga, I
PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL, PHYSICAL AND ENGINEERING SCIENCES

Fluctuating lattice Boltzmann
Adhikari, R; Stratford, K; Wagner, AJ
EUROPHYSICS LETTERS
Vol. 71, Is. 3, 473-479, 2005

Dilatancy, jamming, and the physics of granulation
Haw, MD; Holmes, CB
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 24, S2517-S2531, 2005

Integration through transients for Brownian particles under steady shear
Fuchs, M
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 20, S1681-S1696, 2005

Nonadditivity of polymeric and charged surface interactions: Consequences for doped lamellar phases
Croze, OA
LANGMUIR
Vol. 21, Is. 12, 5627-5638, 2005

Formation of self-supporting reversible cellular networks in suspensions of colloids and liquid crystals
Vollmer, D; Hinze, G; Ullrich, B; Poon, WCK; Schofield, AB
LANGMUIR
Vol. 21, Is. 11, 4921-4930, 2005

Instability and spatiotemporal rheochaos in a shear-thickening fluid model
Aradian, A
EUROPHYSICS LETTERS
Vol. 70, Is. 3, 397-403, 2005

Mode coupling and dynamical heterogeneity in colloidal gelation: A simulation study
Puertas, AM; Fuchs, M
JOURNAL OF PHYSICAL CHEMISTRY B
Vol. 109, Is. 14, 6666-6675, 2005

Glass transitions and shear thickening suspension rheology
Holmes, CB; Fuchs, M; Sollich, P
JOURNAL OF RHEOLOGY
Vol. 49, Is. 1, 237-269, 2005
Current Research
Statistical mechanics and computer simulation of the flow and dynamics of colloidal suspensions, fluid mixtures, and other complex fluids. Recent work has addressed the physics of the glass transition in colloids; shear-thickening, jamming, and the role of capillary forces in colloidal arrest; and the theoretical design of composite materials by controlled phase separation.

Chapman, JN
University of Glasgow

Focused ion beam irradiation of ferromagnetic thin films in the presence of an applied field
McGrouther, D; Nicholson, WAP; McVitie, S
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 18, 3348-3353, 2005

Variation of domain-wall structures and magnetization ripple spectra in permalloy films with controlled uniaxial anisotropy
Gentils, A; Xiong, G; Cowburn, RP
JOURNAL OF APPLIED PHYSICS
Vol. 98, Is. 5, 53905, 2005

Exchange coupling of bilayers and synthetic antiferromagnets pinned to MnPt
Rickart, M; Guedes, A; Negulescu, B; Ventura, J; Sousa, JB; Diaz, P; MacKenzie, M; Freitas, PP
EUROPEAN PHYSICAL JOURNAL B
Vol. 45, Is. 2, 207-212, 2005

Structural analysis of ion irradiated polycrystalline NiFe/FeMn exchange bias systems
Blomeier, S; McGrouther, D; McVitie, S; Weber, MC; Hillebrands, B; Fassbender, J
EUROPEAN PHYSICAL JOURNAL B
Vol. 45, Is. 2, 213-218, 2005

Analytical electron microscopy of advanced multilayer structures for magnetic devices
MacKenzie, M; Cardoso, S; Li, HH; Ferreira, R; Freitas, PP
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 12, 1869-1874, 2005

Exchange bias in ordered antiferromagnets by rapid thermal anneal without magnetic field
Rickart, M; Guedes, A; Franco, N; Barradas, NP; Diaz, P; MacKenzie, M; Freitas, PP
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 13, 2151-2155, 2005

Low resistance tunnel junctions with remote plasma underoxidized thick barriers
Ferreira, R; Freitas, PP; MacKenzie, M;
JOURNAL OF APPLIED PHYSICS
Vol. 97, Is. 10, Part 2, 10C903, 2005

Nanopatterning of a thin ferromagnetic CoFe film by focused-ion-beam irradiation
McGrouther, D;
Low-resistance magnetic tunnel junctions prepared by partial remote plasma oxidation of 0.9 nm Al barriers
Ferreira, R; Freitas, PP; MacKenzie, M
APPLIED PHYSICS LETTERS
Vol. 86, Is. 19, 192502, 2005

Modification of the magnetic properties of exchange coupled NiFe/FeMn films by Ga+ ion irradiation
Blomeier, S; McGrouther, D; O'Neill, R; McVitie, S; Weber, MC; Hillebrands, B; Fassbender, J
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS
Vol. 290, Part I Sp. Iss. SI, 731-734, 2005

Current Research
My principal area of research concerns the characterisation, development and application of advanced functional materials. I aim to gain understanding at a near-atomic level of how various physical properties relate to material nanostructure. I study magnetic materials extensively and also electronic materials & devices and particulate systems. Much of my work uses electron microscopy and related analytical techniques

Chapman, R
University of Paisley

First experiments on transfer with radioactive beams using the TIARA array
TIARA Collaboration
EUROPEAN PHYSICAL JOURNAL A
Vol. 25, 245-250, 2005

Spectroscopy of Ne and Na isotopes: Preliminary results from a EUROBALL plus binary reaction spectrometer experiment
Keyes, KL; Papenberg, A; Ollier, J; Liang, X; Burns, MJ; Labiche, M; Spoehr, KM; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 25, 431-432, 2005

The CLARA-PRISMA setup installed at LNL: first results
Gadea, A; Marginean, N; Corradi, I; Lenzi, SM; Ur, CA; Farnea, E; de Angelis, G; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1443-S1448, 2005

Nucleon transfer via (d,p) using TIARA with a Ne-24 radioactive beam
Catford, WN; Timis, CN; Lemmon, RC; Labiche, M; Orr, NA; Caballero, L; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1655-S1661, 2005

Study of transfer reactions in inverse kinematics with the TIARA array
Labiche, M; Timis, CN; Lemmon, RC; Catford, WN; Amzal, N; Ashwood, NI; et al.
High spin studies of the Er and Tm isotopes around $A=166$
Burns, MJ; Spohr, KM; Ollier, J; Labiche, M; Liang, X; Farnea, E; Axiotis, M; Martinez, T; Napoli, DR; Ur, CA; Kroll, T
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1691-S1695, 2005

Spectroscopy of Ne, Na and Mg isotopes approaching the Island of Inversion
Keyes, KI; Papenberg, A; Ollier, J; Liang, X; Burns, MJ; Labiche, M; Spohr, KM; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1827-S1830, 2005

Intruder configurations in neutron-rich P and S isotopes
Ollier, J; Hodsdon, A; Liang, X; Burns, M; Keyes, K; Labiche, M; Papenberg, A; Spohr, KM; Davison, M; de Angelis, G; Axiotis, M; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1903-S1906, 2005

Intruder configurations in neutron-rich P-34
Ollier, J; Liang, X; Labiche, M; Spohr, KM; Davison, M; de Angelis, G; Axiotis, M; Kroll, T; Napoli, DR; Martinez, T; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 3, 34316, 2005

Cheplakov, A
University of Glasgow

Design and performance of the ABCD3TA ASIC for readout of silicon strip detectors in the ATLAS semiconductor tracker
Campabadal, F; Fleta, C; Key, M; Lozano, M; Martinez, C; Pellegrini, G; Rafi, JM; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 552, Is. 3, 292-328, 2005

Beam tests of ATLAS SCT silicon strip detector modules
Campabadal, F; Fleta, C; Key, M; Lozano, M; Martinez, C; Pellegrini, G; Rafi, JM; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 538, Is. 01-Mar, 384-407, 2005

Current Research
I am continuing my research work in ATLAS experiment at LHC. Presently this work is concentrated on jet physics, in particular, on implementation of a new algorithm for jet reconstruction. The mid-point algorithm will be applied for reconstruction of the multi-
jet events in ATLAS, and its performance will be compared with the results of the standard fixed-cone and Kt algorithms.

**Clark, PJ**  
University of Edinburgh

*Search for the W-exchange decays B-0 -> Ds(*)-Ds(*)+*  
Aubert, B; Barate, R; Boutigny, D; Coudenc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.  
PHYSICAL REVIEW D  
Vol. 72, Is. 11, 111101, 2005*

*Study of the tau(-)-> 3h(-)2h(+)+nu(tau) decay*  
Aubert, B; Barate, R; Boutigny, D; Coudenc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.  
PHYSICAL REVIEW D  
Vol. 72, Is. 7, 72001, 2005*

*Measurements of branching fractions and dalitz distributions for B-0 ->(DK0)-K-(*)+/--pi(-/+) decays*  
Aubert, B; Barate, R; Boutigny, D; Coudenc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.  
PHYSICAL REVIEW LETTERS  
Vol. 95, Is. 17, 171802, 2005*

*Dalitz plot analysis of D-0 ->(K)over-bar(0)K(+)K(-)*  
Aubert, B; Barate, R; Boutigny, D; Coudenc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.  
PHYSICAL REVIEW D  
Vol. 72, Is. 5, 52008, 2005*

*Determination of vertical bar V-ub vertical bar from measurements of the electron and neutrino momenta in inclusive semileptonic B decays*  
Aubert, B; Barate, R; Boutigny, D; Coudenc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.  
PHYSICAL REVIEW LETTERS  
Vol. 95, Is. 11, 111801, 2005*

*Search for b -> u transitions in B- -> (DK)-K-0 and B- -> (DK)-K-*0*  
Aubert, B; Barate, R; Boutigny, D; Coudenc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.  
PHYSICAL REVIEW D  
Vol. 72, Is. 3, 32004, 2005*

*Measurement of the total width, the electronic width, and the mass of the Upsilon(10580) resonance*  
Aubert, B; Barate, R; Boutigny, D; Gaillard, JM; Hicheur, A; et al.  
PHYSICAL REVIEW D  
Vol. 72, Is. 3, 32005, 2005*

*Search for the rare decays B+ ->(D(*)+K0)*  
Aubert, B; Barate, R; Boutigny, D; Coudenc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.  
PHYSICAL REVIEW D  
Vol. 72, Is. 1, 11102, 2005*

*Search for lepton flavor violation in the decay tau(+/-)->nu(+/-)gamma*  
Aubert, B; Barate, R; Boutigny, D; Coudenc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
Physiological Review Letters
Vol. 95, Is. 4, 41802, 2005

Search for the rare leptonic decay \( B \rightarrow \tau^(-)\nu(\tau) \)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Gaillard, JM; Hicheur, A; et al.

Physiological Review Letters
Vol. 95, Is. 4, 41804, 2005

Improved measurement of the Cabibbo-Kobayashi-Maskawa angle \( \alpha \) using \( B_0(B) \rightarrow \rho^0(+)\rho^0(-) \)
decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.

Physiological Review Letters
Vol. 95, Is. 4, 41805, 2005

Measurement of the branching fraction of \( \Upsilon(4S) \rightarrow (BB^0)B^0 \)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.

Physiological Review Letters
Vol. 95, Is. 4, 42001, 2005

Search for strange-pentaquark production in \( e^+(e^-) \) annihilation at \( \sqrt{s} = 10.58 \) GeV
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.

Physiological Review Letters
Vol. 95, Is. 4, 42002, 2005

Evidence for the decay \( B^+ \rightarrow K^+\pi^0 \)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.

Physiological Review D
Vol. 71, Is. 11, 111101, 2005

Measurement of the branching fraction and the CP-violating asymmetry for the decay \( B^0 \rightarrow K^-\pi^0 \)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.

Physiological Review D
Vol. 71, Is. 11, 111102, 2005

Measurement of time-dependent CP-violating asymmetries and constraints on \( \sin(2 \beta + \gamma) \) with partial reconstruction of \( B \rightarrow D_0^+/-\pi^0(+)/- \) decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.

Physiological Review D
Vol. 71, Is. 11, 112003, 2005

Branching fraction and CP asymmetries of \( B^0 \rightarrow (KSKSKS0)K^0K^0 \)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.

Physiological Review Letters
Vol. 95, Is. 1, 11801, 2005

Search for the decay \( B^+ \rightarrow K^+\nu(\nu)\bar{\nu} \)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Gaillard, JM; Hicheur, A; et al.

Physiological Review Letters
Vol. 94, Is. 10, 101801, 2005
And **BaBar** Collaboration

**Current Research**
Research interests are in the fundamental particles of nature and their interactions. In particular, measurements of CP violation (matter-antimatter asymmetry) in B physics and the discovery of new particle decays. Member of the BaBar and LHCb collaborations. Leading an area of expertise in distributed storage management for the GridPP collaboration.

**Clarke, P**
University of Edinburgh

*Performance of 1 and 10 Gigabit Ethernet cards with server quality motherboards*
Hughes-Jones, R; Dallison, S
FUTURE GENERATION COMPUTER SYSTEMS
Vol. 21, Is. 4, 469-488, 2005

*The TeraGyroid Experiment: Supercomputing 2003*
R. J. Blake, P. V. Coveney, P. Clarke, S. M. Pickles,
SCIENTIFIC PROGRAMMING
Vol. 13, Number 1, 1-17, 2005

**Current Research**
In experimental particle physics research into matter anti-matter asymmetry and CP violation at the large hadron collider in CERN. In e-Science research into high performance transport protocols for networks, international research networking and Director of the National e-Science Centre.

**Clegg, P**
University of Edinburgh

*Colloid-stabilized emulsions: behaviour as the interfacial tension is reduced*
Herzig, EM; Schofield, AB; Horozov, TS; Binks, BP; Cates, ME; Poon, WCK
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 45, S3433-S3438, 2005

*Calorimetric study of the nematic to smectic-A and smectic-A to smectic-C phase transitions in liquid-crystal-aerosil dispersions*
Roshi, A; Iannacchione, GS; Birgeneau, RJ; Neubert, ME
PHYSICAL REVIEW E
Vol. 72, Is. 5, Part 1, 51716, 2005

*X-ray studies of the phases and phase transitions of liquid crystals*
ACTA CRYSTALLOGRAPHICA SECTION A
Vol. 61, Part 1, 112-121, 2005

34
Cochran, S
University of Paisley

*Characterisation and modelling of multilayer ultrasonic transducers with non-uniform bondlines*
McRobbie, G; Wu, Z;
ELECTRONICS LETTERS
Vol. 41, Is. 15, 880-881, 2005

*Ultrasonic thin film transducers for high-temperature NDT*
Kirk, KJ; Lee, CK;
INSIGHT
Vol. 47, Is. 2, 85-87, 2005

*Comparison of y/36°-cut and z-cut lithium niobate composites for high temperature ultrasonic applications*
Schmarje, N; Kirk, KJ
NONDESTRUCTIVE TESTING AND EVALUATION

Cole, RJ

*Effects of ion bombardment on the optical and electronic properties of Cu(110)*
Martin, DS; Weightman, P
PHYSICAL REVIEW B
Vol. 72, Is. 3, 35408, 2005

Courtial, J
University of Glasgow

*3D interferometric optical tweezers using a single spatial light modulator*
Schonbrun, E; Piestun, R; Jordan, P; Cooper, J; Wulff, KD; Padgett, M
OPTICS EXPRESS
Vol. 13, Is. 10, 3777-3786, 2005

*Experimental demonstration of holographic three-dimensional light shaping using a Gerchberg-Saxton algorithm*
Whyte, G
NEW JOURNAL OF PHYSICS
Vol. 7, 117, 2005

*Vortex knots in light*
Leach, J; Dennis, MR; Padgett, MJ
NEW JOURNAL OF PHYSICS
Vol. 7, 55, 2005
Current Research
Angular momentum of light (in collaboration with Miles Padgett, Glasgow University), simulation of fractal laser modes, BEC holography with shaped light (in collaboration with Aidan Arnold and Patrik Öhberg, Strathclyde University).

Crain, J
University of Edinburgh

Liquid NMA: A surprisingly realistic model for hydrogen bonding motifs in proteins
Whitfield, TW; Martyna, GJ; Allison, S; Bates, SP
CHEMICAL PHYSICS LETTERS
Vol. 414, Is. 01-Mar, 210-214, 2005

Segregation in aqueous methanol enhanced by cooling and compression
Dougan, I; Hargreaves, R; Bates, SP; Finney, JL; Reat, V; Soper, AK
JOURNAL OF CHEMICAL PHYSICS
Vol. 122, Is. 17, 174514, 2005

Electrodeposition of platinum metal on TiN thin films
Evans, SAG; Terry, JG; Plank, NOV; Walton, AJ; Keane, LM; Campbell, CJ; Ghazal, P; Beattie, JS; Su, TJ; Mount, AR
ELECTROCHEMISTRY COMMUNICATIONS
Vol. 7, Is. 2, 125-129, 2005

Craven, AJ
University of Glasgow

Electron energy loss spectroscopy of a TiAlN coating on stainless steel
MacKenzie, M; Weatherly, GC; McComb, DW;
SCRIPTA MATERIALIA
Vol. 53, Is. 8, 983-987, 2005

Investigating physical and chemical changes in high-k gate stacks using nanoanalytical electron microscopy
MacKenzie, M; McComb, DW; Docherty, FT
MICROELECTRONIC ENGINEERING
Vol. 80, 90-97, 2005

Specimen charging in X-ray absorption spectroscopy: correction of total electron yield data from stabilized zirconia in the energy range 250-915 eV
Vlachos, D; McComb, DW
JOURNAL OF SYNCHROTRON RADIATION
Vol. 12, Part 2, 224-233, 2005
Cross, AW
University of Strathclyde, Department of Physics

_A laboratory experiment to investigate auroral kilometric radiation emission mechanisms_
Speirs, DC; Vorgul, I; Ronald, K; Bingham, R; Cairns, RA; Phelps, ADR; Kellett, BJ; Whyte, CG; Robertson, C
JOURNAL OF PLASMA PHYSICS
Vol. 71, Part 5, 665-674, 2005

_Observation of photonic band-gap control in one-dimensional Bragg structures_
Konoplev, IV; McGrane, P; Phelps, ADR; Ronald, K
APPLIED PHYSICS LETTERS
Vol. 87, Is. 12, 121104, 2005

_Peculiarities of mode spectrum in two-dimensional Bragg structures_
Ginzburg, NS; Peskov, NY; Sergeev, AS; Phelps, ADR;
OPTICS COMMUNICATIONS
Vol. 250, Is. 04-Jun, 309-315, 2005

_Gyro-BWO experiments using a helical interaction waveguide_
He, WL; Ronald, K; Young, AR; Phelps, ADR; Whyte, CG; Rafferty, EG; Thomson, J; Robertson, CW; Speirs, DC; Samsonov, SV; Bratman, VL; Denisov, GG
IEEE TRANSACTIONS ON ELECTRON DEVICES
Vol. 52, Is. 5, 839-844, 2005

_Wave interference and band gap control in multiconductor one-dimensional Bragg structures_
Konoplev, IV; McGrane, P; Ronald, K; Phelps, ADR
JOURNAL OF APPLIED PHYSICS
Vol. 97, Is. 7, 73101, 2005

_Microwave pulse compression using a helically corrugated waveguide_
Burt, G; Samsonov, SV; Phelps, ADR; Bratman, VL; Ronald, K; Denisov, GG; He, WL; Young, AR; Konoplev, IV
IEEE TRANSACTIONS ON PLASMA SCIENCE
Vol. 33, Is. 2, Part 2, 661-667, 2005

Current Research
Research interests include plasma physics, pseudospark discharges and high power free electron radiation sources where complex electromagnetic structures are used to modify and control the properties of the radiation with which an electron beam is interacting. The high power microwave and millimetre wave radiation generated has applications in plasma heating/diagnostics and particle acceleration.

Crowder, JG
Heriot-Watt University
Cunningham, A
University of Strathclyde, Department of Physics

Evidence for wavelength dependence of the scattering phase function and its implication for modeling radiance transfer in shelf seas
McKee, D
APPLIED OPTICS
Vol. 44, Is. 1, 126-135, 2005

D'Auria, S
University of Glasgow

Search for anomalous kinematics in t(\bar{t})over-bar Dilepton events at CDF II
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 2, 22001, 2005

Measurement of the cross section for prompt diphoton production in p(\bar{p})over-bar collisions at root s=1.96 TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 2, 22003, 2005

Search for scalar leptoquark pairs decaying to v(\bar{v})over-bar q(\bar{q})over-bar in p(\bar{p})over-bar collisions at root s=1.96 TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 112001, 2005

Study of jet shapes in inclusive jet production in p(\bar{p})over-bar collisions at root s=1.96 TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 112002, 2005

Search for ZZ and ZW production in pp(-) collisions at root s=1.96 TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 9, 91105, 2005

Measurements of bottom-antibottom azimuthal production correlations in proton-antiproton collisions at root s=1.8 TeV
Acosta, D; Affolder, T; Albrow, MG; Ambrose, D; Amidei, D; Anikeev, K; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 9, 92001, 2005

Search for excited and exotic electrons in the e gamma decay channel in p(\bar{p})over-bar collisions at root s=1.96 TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Measurement of the lifetime difference between B_s mass eigenstates
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 10, 101803, 2005

First measurements of inclusive W and Z cross sections from Run II of the Fermilab Tevatron Collider
Acosta, D; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; Amerio, S; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 9, 91803, 2005

Comparison of three-jet events in p(p)over-bar collisions at root s=1.8 TeV to predictions from a next-to-leading order QCD calculation
Acosta, D; Affolder, T; Albrow, MG; Ambrose, D; Amidei, D; Anikeev, K; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 3, 32002, 2005

And CDF Collaboration

Davies, CT
University of Glasgow

Accurate determinations of alpha(s) from realistic lattice QCD
Mason, Q; Trottier, HD; Foley, K; Gray, A; Lepage, GP; Nobes, M; Shigemitsu, J
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 5, 52002, 2005

The quenched continuum limit
Lepage, GP; Niedermayer, F; Toussaint, D
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 261-263, 2005

The heavy quark’s self energy from moving NRQCD on the lattice
Dougall, A; Foley, KM; Lepage, GP
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 431-433, 2005

Semileptonic B decays with N_f=2+1 dynamical quarks
Shigemitsu, J; Dougall, A; Foley, K; Gamiz, E; Gray, A; Gulez, E; Lepage, GP; Wingate, M
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 464-466, 2005

Moving NRQCD: B mesons at high velocities
Foley, KM; Dougall, A; Lepage, GP
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 470-472, 2005
And HPQCD Collaboration, UKQCD Collaboration

Current Research
Prof. Davies and the HPQCD collaboration, with others, recently achieved the first realistic numerical simulations of the theory of the strong force that operates between quarks deep inside the atomic nucleus. She is applying this to decay rates of particles containing b quarks that are the focus of work to understand how Nature distinguishes between matter and antimatter.

Dawson, MD
University of Strathclyde, Institute of Photonics

Roles for aluminium indium nitride insertion layers in fabrication of GaN-based microcavities
Bejtka, K; Rizzi, F; Edwards, PR; Martin, RW; Gu, E; Watson, IM; Sellers, IR; Semon, F
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE
Vol. 202, Is. 14, 2648-2652, 2005

Influence of composition diffusion on the band structures of InGaNAs/GaAs quantum wells investigated by the band-anticrossing model
Qiu, YN; Rorison, JM; Sun, HD; Calvez, S; Bryce, AC
APPLIED PHYSICS LETTERS
Vol. 87, Is. 23, 231112, 2005

Index and gain dynamics of optically pumped GaInNAs vertical-cavity semiconductor optical amplifiers
Laurand, N; Calvez, S; Kelly, AE
APPLIED PHYSICS LETTERS
Vol. 87, Is. 23, 231115, 2005

Low-loss GaInNAs saturable Bragg reflector for mode-locking of a femtosecond Cr4+: Forsterite-laser
McWilliam, A; Lagatsky, AA; Lebum, CG; Fischer, P; Brown, CT; Valentine, GJ; Kemp, AJ; Calvez, S; Burns, D; Pessa, M; Sibbett, W
IEEE PHOTONICS TECHNOLOGY LETTERS
Vol. 17, Is. 11, 2292-2294, 2005

Role of Sb in the growth and optical properties of 1.55 μm GaIn(Sb)As/GaNAs quantum-well structures by molecular-beam epitaxy
Sun, HD; Calvez, S; Gupta, JA; Sproule, GI; Wu, X; Wasilewski, ZR
APPLIED PHYSICS LETTERS
Vol. 87, Is. 18, 181908, 2005

Use of AlInN layers in optical monitoring of growth of GaN-based structures on free-standing GaN substrates
Watson, IM; Liu, C; Gu, E; Edwards, PR; Martin, RW
APPLIED PHYSICS LETTERS
Vol. 87, Is. 15, 151901, 2005

Red microchip VECSEL array
Spectral conversion of InGaN ultraviolet microarray light-emitting diodes using fluorene-based red-, green-, blue-, and white-light-emitting polymer overlayer films
Heliotis, G; Stavrinou, PN; Bradley, DDC; Gu, E; Griffin, C; Jeon, CW;
APPLIED PHYSICS LETTERS
Vol. 87, Is. 10, 103505, 2005

Polymer microlens arrays applicable to AlInGaN ultraviolet micro-light-emitting diodes
Jeon, CW; Gu, E; Liu, C; Girkin, JM;
IEEE PHOTONICS TECHNOLOGY LETTERS
Vol. 17, Is. 9, 1887-1889, 2005

Photoluminescence characterization of midinfrared \text{InN}_x\text{As}_{1-x}/\text{In}_{0.53}\text{Ga}_{0.47}\text{As}/\text{InP} multiquantum wells with various \text{N} contents
Sun, HD; Clark, AH; Calvez, S; Shih, DK; Lin, HH
APPLIED PHYSICS LETTERS
Vol. 87, Is. 8, 81908, 2005

Impact of laser scribing for efficient device separation of LED components
Illy, EK; Knowles, M; Gu, E
APPLIED SURFACE SCIENCE
Vol. 249, Is. 38808, 354-361, 2005

Effect of multilayer barriers on the optical properties of GaInNAs single quantum-well structures grown by metalorganic vapor phase epitaxy
Sun, HD; Clark, AH; Calvez, S; Kim, KS; Kim, T; Park, YJ
APPLIED PHYSICS LETTERS
Vol. 87, Is. 2, 21903, 2005

Mask-free photolithographic exposure using a matrix-addressable micropixelated AlInGaN ultraviolet light-emitting diode
Jeon, CW; Gu, E
APPLIED PHYSICS LETTERS
Vol. 86, Is. 22, 221105, 2005

Spectroscopic characterization of 1.3 \text{mu} \text{m} GaInNAs quantum-well structures grown by metal-organic vapor phase epitaxy
Sun, HD; Clark, AH; Calvez, S; Qiu, YN; Rorison, JM; Kim, KS; Kim, T; Park, YJ
APPLIED PHYSICS LETTERS
Vol. 86, Is. 9, 92106, 2005

Performance comparison of GaInNAs vertical-cavity semiconductor optical amplifiers
Laurand, N; Calvez, S; Bryce, AC; Jouhti, T; Konttinent, J; Pessa, M
IEEE JOURNAL OF QUANTUM ELECTRONICS
Vol. 41, Is. 5, 642-649, 2005

Fabrication and evaluation of GaN negative and bifocal microlenses
Choi, HW; Gu, E; Liu, C; Girkin, JM
Tapered sidewall dry etching process for GaN and its applications in device fabrication
Choi, HW; Jeon, CW
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B
Vol. 23, Is. 1, 99-102, 2005

Fabrication of natural diamond microlenses by plasma etching
Choi, HW; Gu, E; Liu, C; Griffin, C; Girkin, JM; Watson, IM
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B
Vol. 23, Is. 1, 130-132, 2005

Improved current spreading in 370 nm AlGaN microring light emitting diodes
Choi, HW
APPLIED PHYSICS LETTERS
Vol. 86, Is. 5, 53504, 2005

Investigation of phase-separated electronic states in 1.5 μm GaInNAs/GaAs heterostructures by optical spectroscopy
Sun, HD; Clark, AH; Calvez, S; Gilet, P; Grenouillet, I; Million, A
JOURNAL OF APPLIED PHYSICS
Vol. 97, Is. 3, 33517, 2005

Beam divergence measurements of InGaN/GaN micro-array light-emitting diodes using confocal microscopy
Griffin, C; Gu, E; Choi, HW; Jeon, CW; Girkin, JM; McConnell, G
APPLIED PHYSICS LETTERS
Vol. 86, Is. 4, 41111, 2005

InGaN nano-ring structures for high-efficiency light emitting diodes
Choi, HW; Jeon, CW; Liu, C; Watson, IM; Edwards, PR; Martin, RW; Tripathy, S; Chua, SJ
APPLIED PHYSICS LETTERS
Vol. 86, Is. 2, 21101, 2005

Thermal management in vertical-external-cavity surface-emitting lasers: Finite-element analysis of a heatspreader approach
Kemp, AJ; Valentine, GJ; Hopkins, JM; Hastie, JE; Smith, SA; Calvez, S; Burns, D
IEEE JOURNAL OF QUANTUM ELECTRONICS
Vol. 41, Is. 2, 148-155, 2005

High power CW red VECSEL with linearly polarized TEM00 output beam
Hastie, JE; Calvez, S; Leinonen, T; Laakso, A; Lyytikainen, J; Pessa, M
OPTICS EXPRESS
Vol. 13, Is. 1, 77-81, 2005

Photoluminescence characteristics of 1.5-μm Ga1-xInxNyAs1-y/GaAs structures grown by molecular beam epitaxy
Sun, HD; Calvez, S; Gilet, P; Grenouillet, I; Million, A
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING
Current Research
Prof Dawson heads up the III-V Semiconductor Optoelectronic Devices team. This team has a broad range of activity ranging from compound semiconductor material research, device design and device processing, to the development of semiconductor laser and LED sources. Particular emphasis is on surface normal emitting devices (VCSELs, VECSELs), SOAs and microLED arrays.

Del Debbio, L
University of Edinburgh

Pion distribution amplitude from the lattice
FEW-BODY SYSTEMS
Vol. 36, Is. 01-Apr, 77-82, 2005

Unbiased determination of the proton structure function $F_2(p)$ with faithful uncertainty estimation
NNPDF Collaboration
JOURNAL OF HIGH ENERGY PHYSICS
Is. 3, 80, 2005

Topological susceptibility for the $SU(3)$ Yang-Mills theory
Del Debbio, L;
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 603-605, 2005

N-ality and topology at finite temperature
Panagopoulos, H; Vicari, E
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 606-608, 2005

A finite temperature investigation of the Georgi-Glashow model in 3D
Barresi, A; Lucini, B
NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 814-816, 2005

Topological susceptibility in $SU(3)$ gauge theory
Giusti, L; Pica, C
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 3, 32003, 2005
Dholakia, K
University of St Andrews

Membrane disruption by optically controlled microbubble cavitation
Prentice, P; Cuschierp, A; Prausnitz, M; Campbell, P
NATURE PHYSICS
Vol. 1, Is. 2, 107-110, 2005

Single-scan spectroscopy of mercury at 253.7 nm by sum frequency mixing of violet and red microlensed diode lasers
Carruthers, AE; Lake, TK; Shah, A; Allen, JW; Sibbett, W
OPTICS COMMUNICATIONS
Vol. 255, Is. 04-Jun, 261-266, 2005

Shedding light on life
Neuman, K;
PHYSICS WORLD
Vol. 18, Is. 10, 35-37, 2005

Light-induced cell separation in a tailored optical landscape
Paterson, L; Papagiakoumou, E; Milne, G; Garces-Chavez, V; Tatarkova, SA; Sibbett, W; Gunn-Moore, FJ; Bryant, PE; Riches, AC
APPLIED PHYSICS LETTERS
Vol. 87, Is. 12, 123901, 2005

White light propagation invariant beams
Fischer, P; Brown, CTA; Morris, JE; Lopez-Mariscal, C; Wright, EM; Sibbett, W
OPTICS EXPRESS
Vol. 13, Is. 17, 6657-6666, 2005

Violet diode-assisted photoporation and transfection of cells
Paterson, L; Agate, B; Sibbett, W; Comrie, M; Brown, TA; Riches, AC; Bryant, PE; Ferguson, R; Stevenson, D; Lake, TK; Gunn-Moore, FJ
BIOPHARM INTERNATIONAL
Vol. 18, Is. 8, 30, 2005

All-optical control of microfluidic components using form birefringence
Neale, SL; Macdonald, MP; Krauss, TF
NATURE MATERIALS
Vol. 4, Is. 7, 530-533, 2005

Optical conveyor belt for delivery of submicron objects
Cizmar, T; Garces-Chavez, V; Zemanek, P
APPLIED PHYSICS LETTERS
Vol. 86, Is. 17, 174101, 2005

Optical steering of high and low index microparticles by manipulating an off-axis optical vortex
Lee, WM; Ahluwalia, BPS; Yuan, XC; Cheong, WC
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 1, 1-6, 2005
Extended-area optically induced organization of microparticles on a surface
Garces-Chavez, V; Spalding, GC
APPLIED PHYSICS LETTERS
Vol. 86, Is. 3, 31106, 2005

Photoporation and cell transfection using a violet diode laser
Paterson, L; Agate, B; Comrie, M; Ferguson, R; Lake, TK; Morris, JE; Carruthers, AE;
Brown, CTA; Sibbett, W; Bryant, PE; Gunn-Moore, F; Riches, AC
OPTICS EXPRESS
Vol. 13, Is. 2, 595-600, 2005

Bessel beams: diffraction in a new light
McGloin, D; Dholakia, K
CONTEMPORARY PHYSICS
Vol. 46, Is. 1, 15-28, 2005

Optically anisotropic colloids of controllable shape
Fernandez-Nieves, A; Cristobal, G; Garces-Chavez, V; Spalding, GC; Dholakia, K;
Weitz, DA
ADVANCED MATERIALS
Vol. 17, 680, 2005

Current Research
My interests are primarily in optical micromanipulation from the size scale of biological
cells colloidal particles right down to single atoms. Main areas include optical trapping
over large areas, organisation of microparticles, microfluidics, cell sorting and
transfection, Raman spectroscopy and atom guiding in light fields and hollow fibres. In
addition I work on various aspects of non-zero order light beams and their propagation
-especially Laguerre-Gaussian and Bessel beams).

Diver, D
University of Glasgow

Damped Bernstein modes in a weakly relativistic pair plasma
Laing, EW;
PHYSICAL REVIEW E
Vol. 72, Is. 3, Part 2, 36409, 2005

Fip enhancement by Alfven ionization
Fletcher, L; Potts, HE
SOLAR PHYSICS
Donaldson, GB
University of Strathclyde, Department of Physics

*Single sensor high-temperature superconducting axial gradiometer with thick film pick-up loops*
Haining, S; Romans, EJ; Pegrum, CM; Hao, I; Macfarlane, JC
IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY
Vol. 15, Is. 2, Part 1, 769-772, 2005

Doyle, AT
University of Glasgow

*Study of deep inelastic inclusive and diffractive scattering with the ZEUS forward plug calorimeter*
Chekanov, S; Derrick, M; Magill, S; Miglioranzi, S; Musgrave, B; Repond, J; Yoshida, R; Mattingly, MCK; Pavel, N; Molina, AGY; et al.
NUCLEAR PHYSICS B
Vol. 713, Is. 3, 387-77, 3-80, 2005

And ZEUS Collaboration

Current Research
Tony Doyle is a member of the ZEUS collaboration working on the analysis of structure functions and hadronic final states in deep inelastic scattering and a member of ATLAS searching for the Higgs boson at the LHC. In preparation for LHC data-taking, he is currently GridPP Project Leader, building the Grid for particle physics.

Dunlop, JS
University of Edinburgh

*A robust sample of submillimetre galaxies: constraints on the prevalence of dusty, high-redshift starbursts*
Ivison, RJ; Smail, I; Greve, TR; Swinbank, AM; Stevens, JA; Mortier, AM; Serjeant, S; Targett, TA; Bertoldi, F; Blain, AW; Chapman, SC
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 364, Is. 3, 1025-1040, 2005

*The evolution of K-S-selected galaxies in the GOODS/CDFS deep ISAAC field*
Caputi, KI; McLure, RJ; Roche, ND
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 361, Is. 2, 607-622, 2005

*The extragalactic submillimetre population: Predictions for the SCUBA Half-Degree Extragalactic Survey (SHADES)*
van Kampen, E; Percival, WJ; Crawford, M; Scott, SE; Bevis, N; Oliver, S; Pearce, F; Kay, ST; Gaztanaga, E; Hughes, DH; Aretxaga, I
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 359, Is. 2, 469-480, 2005
Confirmation of the effectiveness of submm source redshift estimation based on rest-frame radio-FIR photometry
Aretxaga, I; Hughes, DH
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 358, Is. 4, 1240-1246, 2005

Correlations between bright submillimetre sources and low-redshift galaxies
Almaini, O; Willott, CJ; Alexander, DM; Bauer, FE; Liu, CT
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 358, Is. 3, 875-882, 2005

Submillimetre detection of a high-redshift type 2 QSO
Mainieri, V; Rigopoulou, D; Lehmann, I; Scott, S; Matute, I; Almaini, O; Tozzi, P; Hasinger, G
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, Is. 4, 1571-1575, 2005

Dunn, MH
University of St Andrews

Broadband 1.5 μm source through type I and II noncollinear phase matching of an optical parametric oscillator
Terry, JAC; Rae, CF
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS
Vol. 22, Is. 10, 2208-2218, 2005

Current Research
Optics; all solid state laser; electromagnetically induced transparency; harmonic generation; holosteric laser; inversionless laser; laser diode; laser spectroscopy; laserstabilisation; lidar; NdYAG laser; neodymium yttrium aluminium garnet; nonlinear optical application; nonlinear optics; optical parametric oscillator; optical pumping; Q-switching; second harmonic; tunable laser

Duxbury, G
University of Strathclyde, Department of Physics

Real-time trace-level detection of carbon dioxide and ethylene in car exhaust gases
McCulloch, MT; Langford, N;
APPLIED OPTICS
Vol. 44, Is. 14, 2887-2894, 2005

Quantum cascade semiconductor infrared and far-infrared lasers: from trace gas sensing to non-linear optics
Duxbury, G; Langford, N; McCulloch, MT; Wright, S
CHEMICAL SOCIETY REVIEW
Vol. 34, 921-934, 2005
Discussion on the characterization of urban pollutant fluxes
Duxbury, G
FARADAY DISC. ROYAL SOCIETY OF CHEMISTRY
130, 374-378 2005

Evans, M
University of Edinburgh

Critical phase in nonconserving zero-range processes and rewiring networks
Angel, AG; Levine, E; Mukamel, D
PHYSICAL REVIEW E
Vol. 72, Is. 4, Part 2, 46132, 2005

Factorised steady states and condensation transitions in nonequilibrium systems
PRAMANA-JOURNAL OF PHYSICS
Vol. 64, Is. 6, 859-869, 2005

Nature of the condensate in mass transport models
Majumdar, SN; Zia, RKP
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 18, 180601, 2005

Nonequilibrium statistical mechanics of the zero-range process and related models
Evans, MR; Hanney, T
JOURNAL OF PHYSICS A-MATHEMATICAL AND GENERAL
Vol. 38, Is. 19, R195-R240, 2005

Current Research
My research has been into fundamental models of nonequilibrium statistical mechanics which pertain to systems driven out of thermal equilibrium. In particular, we have derived the theory of condensation within the zero range process and related models. We have also determined the structure and properties of various nonequilibrium steady states and studied biophysical applications

Ferguson, AI
University of Strathclyde, Department of Physics

Simultaneous stimulated Raman scattering and second harmonic generation in periodically poled lithium niobate
McConnell, G;
OPTICS EXPRESS
Vol. 13, Is. 6, 2099-2104, 2005

Efficient Raman shifting of high-energy picosecond pulses into the eye-safe 1.5-um spectral region by use of a KGe(WO4)(2) crystal
Major, A; Aitchison, JS; Smith, PWE; Langford, N;
OPTICS LETTERS
Vol. 30, Is. 4, 421-423, 2005

Ferguson, AMN
University of Edinburgh

On the accretion origin of a vast extended stellar disk around the Andromeda galaxy
Ibata, R; Chapman, S; Lewis, G; Irwin, M; Tanvir, N
ASTROPHYSICAL JOURNAL
Vol. 634, Is. 1, Part 1, 287-313, 2005

A Keck deimos kinematic study of Andromeda IX: Dark matter on the smallest galactic scales
Chapman, SC; Ibata, R; Lewis, GF; Irwin, M; McConnachie, A; Tanvir, N
ASTROPHYSICAL JOURNAL
Vol. 632, Is. 2, Part 2, L87-L90, 2005

The Isaac Newton telescope wide field camera survey of the monoceros ring: Accretion origin or galactic anomaly?
Conn, BC; Lewis, GF; Irwin, MJ; Ibata, RA; Tanvir, N; Irwin, JM
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 362, Is. 2, 475-488, 2005

A minor-axis surface brightness profile for M31
Irwin, MJ; Ibata, RA; Lewis, GF; Tanvir, NR
ASTROPHYSICAL JOURNAL

A new population of extended, luminous star clusters in the halo of M31
Huxor, AP; Tanvir, NR; Irwin, MJ; Ibata, R; Collett, JL; Bridges, T; Lewis, GF
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 360, Is. 3, 1007-1012, 2005

The Stellar Populations of the M31 Halo Substructure
Ferguson, Annette M. N.; Johnson, Rachel A.; Faria, Daniel C.; Irwin, Mike J.; Ibata, Rodrigo A.; et al.
ASTROPHYSICAL JOURNAL
Vol. 622, L109-112, 2005

Distances and metallicities for 17 Local Group galaxies
McConnachie, A. W.; Irwin, M. J.; Ferguson, A. M. N.; Ibata, R. A.; Lewis, G. F.; Tanvir, N.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, 979-997, 2005

Current Research
My research focuses on using observations of the structure and content of nearby galaxies to constrain ideas about galaxy formation and evolution. Much of my recent
work involves analysis of old and intermediate-age resolved stellar populations in the outer regions of M31 and M33. My work involves both ground and space-based facilities.

Firth, L  
University of Paisley

Firth, WJ  
University of Strathclyde, Department of Physics

Spontaneous and induced motion of optical patterns  
Scroggie, AJ; Gomila, D; Oppo, GL  
APPLIED PHYSICS B-LASERS AND OPTICS  
Vol. 81, Is. 7, 963-968, 2005

Giant excess noise and transient gain in misaligned laser cavities  
Yao, AM  
PHYSICAL REVIEW LETTERS  
Vol. 95, Is. 7, 73903, 2005

Flavell, AJ  
University of Glasgow

Fletcher, L  
University of Glasgow

X-ray quasi-periodic pulsations in solar flares as magnetohydrodynamic oscillations  
Foullon, C; Verwichte, E; Nakariakov, VM;  
ASTRONOMY & ASTROPHYSICS  

Flows in the solar atmosphere due to the eruptions on the 15th July, 2002  
Harra, LK; Demoulin, P; Mandrini, CH; Matthews, SA; van Driel-Gesztelyi, L; Culhane, JL;  
ASTRONOMY & ASTROPHYSICS  
Vol. 438, Is. 3, 1099-1103, 2005

FIP enhancement by Alfvén ionization  
Diver, DA; Potts, HE  
SOLAR PHYSICS  

Electron acceleration at reconnecting X-points in solar flares  
Hamilton, B; McClements, KG; Thyagaraja, A
Current Research
Main research interests centre on solar flares and encompass particle acceleration and transport (using test-particle simulations and observations) and the relationship of acceleration to coronal magnetic field restructuring and evolution. Also, the structure and evolution of large-scale solar active region magnetic fields, and spectroscopic solar plasma diagnostics.

Franke-Arnold, S
University of Glasgow

Large uncertainty intelligent states for angular momentum and angle
Gotte, JB; Zambrini, R; Barnett, SM
JOURNAL OF OPTICS B-QUANTUM AND SEMICLASSICAL OPTICS
Vol. 7, Is. 12, S563-S571, 2005

Minimum uncertainty states of angular momentum and angular position
Pegg, DT; Barnett, SM; Zambrini, R; Padgett, M
NEW JOURNAL OF PHYSICS
Vol. 7, 62, 2005

Current Research
Sonja Franke-Arnold is currently holding a Dorothy Hodgkin Research Fellowship aimed at investigating the nature of the orbital angular momentum of light. Of particular interest is the interplay between the angular definition of a light beam and its orbital angular momentum distribution. Related effects are studied both theoretically and experimentally. She is working 75% and has had 4 months maternity leave in early 2005 following the birth of her third child.

Fraser, H
University of Strathclyde, Department of Physics

A 3-5 mu m VLT spectroscopic survey of embedded young low mass stars II - Solid OCN-
van Broekhuizen, FA; Pontoppidan, KM; van Dishoeck, EF
ASTRONOMY & ASTROPHYSICS
Vol. 441, Is. 1, 249-260, 2005
Competition between CO and N-2 desorption from interstellar ices
Oberg, KI; van Broekhuizen, F; Bisschop, SE; van Dishoeck, EF; Schlemmer, S
ASTROPHYSICAL JOURNAL
Vol. 621, Is. 1, Part 2, L33-L36, 2005

Probing the surfaces of interstellar dust grains: the adsorption of CO at bare grain surfaces
Bisschop, SE; Pontoppidan, KM; Tielens, AGGM; van Dishoeck, EF
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, Is. 4, 1283-1292, 2005

Current Research
Our Astrochemistry research focuses on chemical processes occurring in star-forming regions. Using data from ASTRO-F, we are mapping interstellar ice features in starless cores. Our UHV experiment is being built to study atom-molecule reactions leading to ice formation on nano-sized interstellar dust analogues. An ESA parabolic flight in October will show how grains aggregate to form planets and cometary nuclei.

Froggatt, CD
University of Glasgow

Cryptobaryonic dark matter
Nielsen, HB
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 23, 231301, 2005

Hierarchy-problem and a bound state of 6t and 6(t)over-bar
Nielsen, HB; Laperashvili, LV
INTERNATIONAL JOURNAL OF MODERN PHYSICS A
Vol. 20, Is. 6, 1268-1275, 2005

Derivation of Poincare invariance from general quantum field theory
Nielsen, HB
ANNALEN DER PHYSIK
Vol. 14, Is. 01-Mar, 115-147, 2005

Galbraith, I
Heriot-Watt University

Wavelet transforms for optical pulse analysis
Vazquez, JM; Mazilu, M; Miller, A;
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA A-OPTICS IMAGE SCIENCE AND VISION
Vol. 22, Is. 12, 2890-2899, 2005

Homogeneous broadening in quantum dots due to Auger scattering with wetting layer carriers
Nilsson, HH; Zhang, JZ;
Rabi oscillations for subpicosecond pulses in quantum-well optical amplifiers: Interplay of carrier heating, nonlinear, and spectral effects
Zhang, JZ
IEEE JOURNAL OF QUANTUM ELECTRONICS
Vol. 41, Is. 8, 1083-1091, 2005

Excitonic signatures in the photoluminescence and terahertz absorption of a GaAs/AlxGa1-xAs multiple quantum well
Chari, R; Pellegrini, S; Phillips, PJ; Dent, CJ; van der Meer, AFG; Clarke, DG; Kar, AK; Buller, GS; Pidgeon, CR; Murdin, BN; Allam, J; Strasser, G
PHYSICAL REVIEW B
Vol. 71, Is. 7, 73302, 2005

Gibson, G
University of Glasgow

Effects of changes to the stable environment on the exhalation of ethane, carbon monoxide and hydrogen peroxide by horses with respiratory inflammation
Wyse, CA; Skeldon, K; Hotchkiss, JW; Yam, PS; Christley, RM; Preston, T; Cumming, DRS; Padgett, M; Cooper, JC; Love, S
VETERINARY RECORD
Vol. 157, Is. 14, 408-412, 2005

Red microchip VECSEL array
Hastie, JE; Morton, LG; Calvez, S; Dawson, MD; Leinonen, T; Pessa, M; Padgett, MJ
OPTICS EXPRESS
Vol. 13, Is. 18, 7209-7214, 2005

Effect of maximal dynamic exercise on exhaled ethane and carbon monoxide levels in human, equine, and canine athletes
Wyse, C; Cathcart, A; Sutherland, R; Ward, S; McMillan, L; Padgett, M; Skeldon, K
COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY A-MOLECULAR & INTEGRATIVE PHYSIOLOGY
Vol. 141, Is. 2, 239-246, 2005

Development of high-resolution real-time sub-ppb ethane spectroscopy and some pilot studies in life science
Skeldon, KD; Wyse, CA; McMillan, LC; Monk, SD; Longbottom, C; Padgett, MJ
APPLIED OPTICS
Vol. 44, Is. 22, 4712-4721, 2005

The potential offered by real-time, high-sensitivity monitoring of ethane in breath and some pilot studies using optical spectroscopy
Skeldon, KD; Patterson, C; Wyse, CA; Padgett, MJ; Longbottom, C; McMillan, LC
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, 2005
An open-path, hand-held laser system for the detection of methane gas
van Well, B; Murray, S; Hodgkinson, J; Pride, R; Strzoda, R; Padgett, M
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, 2005

Girkin, JM
University of Strathclyde, Institute of Photonics

Creating permanent 3D arrangements of isolated cells using holographic optical tweezers
Jordan, P; Leach, J; Padgett, M; Blackburn, P; Isaacs, N; Goksor, M; Hanstorp, D; Wright, A; Cooper, J
LAB ON A CHIP
Vol. 5, Is. 11, 1224-1228, 2005

Polymer microlens arrays applicable to AlInGaN ultraviolet micro-light-emitting diodes
Jeon, CW; Gu, E; Liu, C; Dawson, MD
IEEE PHOTONICS TECHNOLOGY LETTERS
Vol. 17, Is. 9, 1887-1889, 2005

Advances in laser sources for confocal and multiphoton microscopy
McConnell, G
MICROSCOPY RESEARCH AND TECHNIQUE
Vol. 67, Is. 1, 8-14, 2005

Exploration of the optimisation algorithms used in the implementation of adaptive optics in confocal and multiphoton microscopy
Wright, AJ; Burns, D; Patterson, BA; Poland, SP; Valentine, GJ
MICROSCOPY RESEARCH AND TECHNIQUE
Vol. 67, Is. 1, 36-44, 2005

Fabrication and evaluation of GaN negative and bifocal microlenses
Choi, HW; Gu, E; Liu, C; Dawson, MD
JOURNAL OF APPLIED PHYSICS
Vol. 97, Is. 6, 63101, 2005

Fabrication of natural diamond microlenses by plasma etching
Choi, HW; Gu, E; Liu, C; Griffin, C; Watson, IM; Dawson, MD
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B
Vol. 23, Is. 1, 130-132, 2005

Beam divergence measurements of InGaN/GaN micro-array light-emitting diodes using confocal microscopy
Griffin, C; Gu, E; Choi, HW; Jeon, CW; Dawson, MD; McConnell, G
APPLIED PHYSICS LETTERS
Vol. 86, Is. 4, 41111, 2005

Adaptive optics sharpens multiphoton-microscope images
Girkin, J; Booth, M
LASER FOCUS WORLD
A preliminary technique for investigation of a spectroscopic the diagnosis of natural caries lesions
Ribeiro, A; Rousseau, C; Hall, A; Strang, R; Whitters, CJ; Creanor, S; Gomes, ASL
JOURNAL OF DENTISTRY
Vol. 33, Is. 1, 73-78, 2005

Properties of natural diamond micro-lenses fabricated by plasma etching.
Choi, H.W., E. Gu, C. Liu, C. Griffin, J.M. Girkin, I.M. Watson, M.D. Dawson,
INDUSTRIAL DIAMOND REVIEW 2
29-31, 2005

Evaluation of enamel dental restoration interface by optical coherence tomography
de Melo, L.S.A., R.E. de Araujo, A.Z. Freitas, D. Zezell, N.D. Vieira, J. Girkin, A. Hall,
M.T. Carvalho, A.S.L. Gomes,
JOURNAL OF BIOMEDICAL OPTICS
10 (6), 2005

Nitride micro-display with integrated micro-lenses
H. W. Choi, E. Gu, J. M. Girkin, M. D. Dawson,
PHYSICA STATUS SOLIDI (C)
2, 2903-5, 2005

Fibre Optic Confocal Microscopy of Early Caries Lesions
J M Girkin, A Hall, R Strang, S Creanor, C J Whitters, C Rousseau
EARLY DETECTION OF CARIES
3, 121-133, 2005

Fluorescence spectroscopy of natural carious lesions
AF Hall, A CRibeiro, R Strang, SL Creanor, CJ Whitters, C Rousseau, JM Girkin,
EARLY DETECTION OF CARIES
3, 155-167, 2005

Characterisation of natural carious lesions by fluorescence spectroscopy at 405 nm excitation wavelength
D.M. Zezell; A.C. Ribeiro; L. Bachmann; A.S.L. Gomes; A F Hall, C Rousseau, J M Girkin,
CARIES RESEARCH
35, 303-308, 2005

Properties of natural diamond micro-lenses fabricated by plasma etching
H W Choi, E Gu, C Liu, C Griffin, J M Girkin, I M Watson, M D Dawson
INDUSTRIAL DIAMOND REVIEW 2
29-31, 2005

Evaluation of Enamel Dental Restoration Interface by Optical Coherence Tomography
Hall, M. T. Carvalho and A. S. L. Gomes
JOURNAL OF BIOMEDICAL OPTICS
10(6), 064027, 2005
Current Research
My research concentrates on the application of photonics technology to the life sciences. There is a strong focus on the development of high resolution optical microscopy and the use of active optical elements to compensate for optical aberrations. In a parallel strand my research is developing optical methods for clinical diagnosis in particular in the dental field.

Greated, CA
University of Edinburgh

Investigation of silo bonking: Slip-stick excitation and wall vibration
Buick, JM; Chavez-Sagarnaga, J; Zhong, Z; Ooi, JY; Pankaj; Campbell, DM
JOURNAL OF ENGINEERING MECHANICS-ASCE
Vol. 131, Is. 3, 299-307, 2005

Greaves, J
University of St Andrews

Submillimetre observations of low-mass cloud cores: forming tiny objects in situ
ASTRONOMISCHE NACHRICHTEN
Vol. 326, Is. 10, 1044-1047, 2005

Molecular gas in irradiated protoplanetary discs
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 364, Is. 1, L47-L50, 2005

CO emission from discs around isolated HAeBe and Vega-excess stars
Dent, WRF; Coulson, IM
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 359, Is. 2, 663-676, 2005

Submillimeter images of a dusty Kuiper Belt around eta Corvi
Wyatt, MC; Dent, WRF; Coulson, IM
ASTROPHYSICAL JOURNAL
Vol. 620, Is. 1, Part 1, 492-500, 2005

Structure in the epsilon Eridani debris disk
Holland, WS; Wyatt, MC; Dent, WRF; Robson, EI; Coulson, IM; Jenness, T; Moriarty-Schieven, GH; Davis, GR; Butner, HM; Gear, WK; Dominik, C; Walker, HJ
ASTROPHYSICAL JOURNAL

Current Research
I am modelling the outcome for planetary systems around nearby stars based on the mass of refractory elements in the primordial disk. Both the frequency and heavy-element dependences are reproduced and other quantities such as the number of exo-
Earths can be predicted. I am currently searching for the earliest nearby planetary systems where any life could pre-date that on Earth.

Green, AG
University of St Andrews

Nonlinear quantum critical transport and the Schwinger mechanism for a superfluid-Mott-insulator transition of bosons
Sondhi, SL
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 26, 267001, 2005

Phase bifurcation and quantum fluctuations in Sr3Ru2O7
Grigera, SA; Borzi, RA; Mackenzie, AP; Perry, RS; Simons, BD
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 8, 86402, 2005

Current Research
Study of the behaviour of strongly interacting electrons in solids, in particular the equilibrium and nonequilibrium physics in the vicinity of quantum critical points. Such strongly interacting systems are examples where the whole is more than the sum of its parts. The individual players, the electrons, lose their identity and acquire unexpected properties. Quantum-critical points determine phase transitions driven by quantum fluctuations, not by the more usual thermal noise. Here Dr Green is closely collaborating with the experimental research group in correlated quantum systems. Dr Green is also working on using field theory for determining the capacity of optical communication channels.

Greenaway, A
Heriot-Watt University

Adaptive beam profile control using a simulated annealing algorithm
El-Agmy, R; Bulte, H; Reid, DT
OPTICS EXPRESS
Vol. 13, Is. 16, 6085-6091, 2005

Thin film metrology using modal wavefront sensing
Faichnie, DM; Karstad, K; Bain, I
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, S290-S297, 2005

Pupil replication for exoplanet imaging
Spaan, FHP; Mourai, V
ASTROPHYSICAL JOURNAL
Vol. 618, Is. 2, Part 2, L165-L168, 2005
Gregoryanz, E  
University of Edinburgh

Retention of xenon in quartz and Earth's missing xenon  
Sanloup, C; Schmidt, BC; Perez, EMC; Jambon, A; Mezouar, M  
SCIENCE  
Vol. 310, Is. 5751, 1174-1177, 2005

Crystal structure of sulfur and selenium at pressures up to 160 GPa  
Degtyareva, O; Gregoryanz, E; Mao, HK; Hemley, RJ  
HIGH PRESSURE RESEARCH  
Vol. 25, Is. 1, 17-33, 2005

Crystal structure of the superconducting phases of S and Se  
Degtyareva, O; Gregoryanz, E; Somayazulu, M; Mao, HK; Hemley, RJ  
PHYSICAL REVIEW B  
Vol. 71, Is. 21, 214104, 2005

Melting behavior of H2O at high pressures and temperatures  
Lin, JF; Gregoryanz, E; Struzhkin, VV; Somayazulu, M; Mao, HK; Hemley, RJ  
GEOPHYSICAL RESEARCH LETTERS  
Vol. 32, Is. 11, L11306, 2005

Melting of dense sodium  
Gregoryanz, E; Degtyareva, O; Somayazulu, M; Hemley, RJ; Mao, HK  
PHYSICAL REVIEW LETTERS  
Vol. 94, Is. 18, 185502, 2005

Optical calibration of pressure sensors for high pressures and temperatures  
Goncharov, AF; Zaug, JM; Crowhurst, JC; Gregoryanz, E  
JOURNAL OF APPLIED PHYSICS  
Vol. 97, Is. 9, 94917, 2005

High-pressure Raman scattering and x-ray diffraction of the relaxor ferroelectric  
0.96Pb(Zn1/3Nb2/3)O-3-0.04PbTiO(3)  
Ahart, M; Cohen, RE; Struzhkin, V; Gregoryanz, E; Rytz, D; Prosandeev, SA; Mao, HK;  
Hemley, RJ  
PHYSICAL REVIEW B  
Vol. 71, Is. 14, 144102, 2005

Novel chain structures in group VI elements  
Degtyareva, O; Gregoryanz, E; Somayazulu, M; Dera, P; Mao, HK; Hemley, RJ  
NATURE MATERIALS  
Vol. 4, Is. 2, 152-U31, 2005

Current Research  
Techniques for high-pressure and high-temperature optical spectroscopy and X-ray  
diffraction. Optical studies of simple systems (N2, H2, SiO2, CH4, H2O and etc) at
extreme conditions. Synchrotron X-ray studies of the structures of alkali metals, chalcogens and geophysical compounds at high pressures and temperatures.

Grigera, SA
University of St Andrews

Phase bifurcation and quantum fluctuations in Sr3Ru2O7
Green, AG; Borzi, RA; Mackenzie, AP; Perry, RS; Simons, BD
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 8, 86402, 2005

Current Research
It has always been a difficult problem to determine how interacting particles will order. Quantum mechanics adds further complexity to the problem of quantum critical points - systems tuned such that two types of order are in competence. My research gives insight into their characteristics, the broader consequences of their presence, and notably, the emergence of phases with new types of order in their vicinity.

Hall, D
Heriot-Watt University

CO2 laser processing of alumina (Al2O3) printed circuit board substrates
Moorhouse, CJ; Villarreal, F; Wendland, JJ; Baker, HJ; Hand, DP
IEEE TRANSACTIONS ON ELECTRONICS PACKAGING MANUFACTURING
Vol. 28, Is. 3, 249-258, 2005

Hambly, NC
University of Edinburgh

Proper motion surveys in the infrared
Deacon, NR
ASTRONOMISCHE NACHRICHTEN
Vol. 326, Is. 10, 1011-1014, 2005

The solar neighborhood. XV. Discovery of new high proper motion stars with \( \mu \geq 0.4\) yr\(^{-1}\) between declinations \(-47\) degrees and \(00\) degrees
Subasavage, JP; Henry, TJ; Brown, MA; Jao, WC; Finch, CT
ASTRONOMICAL JOURNAL
Vol. 130, Is. 4, 1658-1679, 2005

The AAO/UKST SuperCOSMOS H alpha survey
Parker, QA; Phillipps, S; Pierce, MJ; Hartley, M; Hambly, NC; Read, MA; MacGillivray, HT; Tritton, SB; Cass, CP; et al.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Southern infrared proper motion survey - I. Discovery of new high proper motion stars from first full hemisphere scan
Deacon, NR; Cooke, JA
ASTRONOMY & ASTROPHYSICS
Vol. 435, Is. 1, 363-372, 2005

The solar neighborhood. XI. The trigonometric parallax of SCR 1845-6357
Deacon, NR; Henry, TJ; Subasavage, JP; Brown, MA; Jao, WC
ASTRONOMICAL JOURNAL
Vol. 129, Is. 1, 409-412, 2005

The solar neighborhood. XII. Discovery of new high proper motion stars with $\mu > 0.4''$ yr$^{-1}$
between declinations -90 degrees and -47 degrees
Subasavage, JP; Henry, TJ; Brown, MA; Jao, WC
ASTRONOMICAL JOURNAL
Vol. 129, Is. 1, 413-432, 2005

Current Research
My research includes development of terabyte "Science Archives". This consists of preparing database systems, calibration procedures and user interfaces for astronomical data, originally employing digitised legacy photographic surveys and latterly for infrared surveys employing 4m-class telescopes. At the same time, I am pursuing my personal research in low luminosity stars (subdwarfs, white dwarfs and brown dwarfs) by exploiting these surveys.

Han, TPJ
University of Strathclyde, Department of Physics

Dependence of the refractive indices in LiNbO3:Cr crystals doped with HfO2
MATERIALS SCIENCE FORUM
Vol. 480-481, 423-7, 2005

Current Research
His research has concentrated on laser spectroscopy of solid state materials doped with optically active ions, namely rare-earth and transition-metal ions, and electro-optical properties of ferroelectric/piezoelectric/relaxor material. His current research is in optical fibre sensing, and with Dr Ivan S. Ruddock (Physics, Strathclyde) is the co-inventor of a new class of distributed sensor exploiting nonlinear excitation of fluorescence using time-correlated light pulses.
Hand, D
Heriot-Watt University

Modelling and calibration of bending strains for iterative laser forming
McBride, R; Bardin, F; Gross, M; Jones, JDC; Moore, AJ
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 22, 4027-4036, 2005

Developments towards controlled three-dimensional laser forming of continuous surfaces
Edwardson, SP; Abed, E; French, P; Dearden, G; Watkins, KG; McBride, R; Jones, JDC; Moore, AJ
JOURNAL OF LASER APPLICATIONS
Vol. 17, Is. 4, 247-255, 2005

Process control of laser conduction welding by thermal imaging measurement with a color camera
Bardin, F; Morgan, S; Williams, S; McBride, R; Moore, AJ; Jones, JDC;
APPLIED OPTICS
Vol. 44, Is. 32, 6841-6848, 2005

CO2 laser processing of alumina (Al2O3) printed circuit board substrates
Moorhouse, CJ; Villarreal, F; Wendland, JJ; Baker, HJ; Hall, DR;
IEEE TRANSACTIONS ON ELECTRONICS PACKAGING MANUFACTURING
Vol. 28, Is. 3, 249-258, 2005

Single-mode mid-IR guidance in a hollow-core photonic crystal fiber
Shephard, JD; MacPherson, WN; Maier, RRJ; Jones, JDC; Mohebbi, M; George, AK; Roberts, PJ; Knight, JC
OPTICS EXPRESS
Vol. 13, Is. 18, 7139-7144, 2005

Improved hollow-core photonic crystal fiber design for delivery of nanosecond pulses in laser micromachining applications
Shephard, JD; Couny, F; Russell, PS; Jones, JDC; Knight, JC;
APPLIED OPTICS
Vol. 44, Is. 21, 4582-4588, 2005

Optical techniques for real-time penetration monitoring for laser welding
Bardin, F; Cobo, A; Lopez-Higuera, JM; Collin, O; Aubry, P; Dubois, T; Hogstrom, M; Nylen, P; Jonsson, P; Jones, JDC;
APPLIED OPTICS
Vol. 44, Is. 19, 3869-3876, 2005

Hollow-core waveguides for particle image velocimetry
Stephens, TJ; Haste, MJ; Parry, JP; Towers, DP; Matsuura, Y; Shi, YW; Miyagi, M;
MEASUREMENT SCIENCE & TECHNOLOGY
Vol. 16, Is. 5, 1119-1125, 2005

Single-pulse femtosecond laser machining of glass
Campbell, S; Dear, FC; Reid, DT
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 4, 162-168, 2005
Optoelectronic device for non-invasive focal point measurement and control of the laser welding process
Cobo, A; Bardin, F; Mirapeix, J; Jones, JDC; Lopez-Higuera, JM
MEASUREMENT SCIENCE & TECHNOLOGY
Vol. 16, Is. 3, 2005

Closed-loop power and focus control of laser welding for full-penetration monitoring
Bardin, F; Cobo, A; Lopez-Higuera, JM; Collin, O; Aubry, P; Dubois, T; Hogstrom, M; Nylen, P; Jonsson, P; Jones, JDC
APPLIED OPTICS
Vol. 44, Is. 1, 13-21, 2005

Current Research
Applications of high power lasers and novel optical fibres. Includes: (i) applications in manufacturing e.g. development of laser-based machining and joining processes, delivery of high peak power laser light through microstructured fibres; and (ii) applications in measurement, including gas sensing using microstructured fibres, measurement of phloem sap flow in trees, and fibre optics for measurement of high speed gas flows.

Hart, A
University of Edinburgh

Automatically generating Feynman rules for improved lattice field theories
von Hippel, GM; Horgan, RR; Storoni, LC
JOURNAL OF COMPUTATIONAL PHYSICS
Vol. 209, Is. 1, 340-353, 2005

And HPQCD Collaboration, UKQCD Collaboration

Current Research
I aim to understand the behaviour of matter at the smallest physical length scales. I do this through a combination of mathematical analysis and simulations carried out on supercomputers in Scotland, the rest of the UK and in the US. At present, I am concentrating on predicting the short lifetime of the Upsilon particle and understanding the long-standing "proton spin crisis".

Hawkins, MRS
University of Edinburgh
Heavens, A
University of Edinburgh

Weak lensing analysis in three dimensions
Castro, PG; Kitching, TD
PHYSICAL REVIEW D
Vol. 72, Is. 2, 23516, 2005

Baryonic conversion tree: the global assembly of stars and dark matter in galaxies from the Sloan Digital Sky Survey
Jimenez, R; Panter, B; Verde, L
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, Is. 2, 495-501, 2005

Current Research
Alan Heavens is developing methods for measuring dark energy properties using three-dimensional weak gravitational lensing, a very promising technique which was pioneered in Edinburgh. He is also analysing the star formation history of the Universe using the 'fossil record' of starlight in galaxies. Finally, he is applying his MOPED data compression algorithm to problems in biology and medicine.

Hendry, MA
University of Glasgow

Determination of Cepheid parameters by light-curve-template fitting
Tanvir, NR; Watkins, A; Kanbur, SM; Berdnikov, LN; Ngeow, CC
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 363, Is. 3, 749-762, 2005

LISA source confusion: identification and characterization of signals
Umstatter, R; Christensen, N; Meyer, R; Simha, V; Veitch, J; Vigeland, S; Woan, G
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 18, S901-S911, 2005

Bayesian modeling of source confusion in LISA data
Umstatter, R; Christensen, N; Meyer, R; Simha, V; Veitch, J; Vigeland, S; Woan, G
PHYSICAL REVIEW D
Vol. 72, Is. 2, 22001, 2005

Heng, IS
University of Glasgow

Calibration of the ALLEGRO resonant detector
McHugh, MP; Johnson, WW; Hamilton, WO; Hanson, J; McNeese, D; Miller, P; Nettles, D; Weaver, J; Zhang, P
CLASSICAL AND QUANTUM GRAVITY
A data analysis technique for the LIGO-ALLEGRO stochastic background search
Whelan, JT; Bose, S; Hanson, J; Johnson, WW; McHugh, MP; Zhang, P
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 18, S1087-S1096, 2005

The AURIGA-LIGO joint burst search
Cadonati, L; Baggio, L; Johnson, W; Mion, A; Ortolan, A; Poggi, S; Prodi, GA; Salemi, F; Sutton, P; Vedovato, G; Zanolin, M; Zendri, JP
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 18, S1337-S1347, 2005

Results from the first burst hardware injections performed on GEO 600
Balasubramanian, R; Grote, H; Hewitson, M; Luck, H; Smith, JR; Strain, KA; Ward, H; Willke, B
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 14, 3015-3028, 2005

The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; Barr, BW; Berukoff, S; Bunkowski, A; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, S193-S198, 2005

And LIGO Scientific Collaboration, TAMA Collaboration

Hilditch, RW
University of St Andrews

First determination of the distance and fundamental properties of an eclipsing binary in the andromeda galaxy
Ribas, I; Jordi, C; Vilardell, F; Fitzpatrick, EL; Guinan, EF
ASTROPHYSICAL JOURNAL
Vol. 635, Is. 1, Part 2, L37-L40, 2005

Astrophysical parameters for the eclipsing binary u herculis
OBSERVATORY
Vol. 125, Is. 1185, 72-81, 2005

Forty eclipsing binaries in the Small Magellanic Cloud: fundamental parameters and Cloud distance
Howarth, ID; Harries, TJ
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 357, Is. 1, 304-324, 2005

Current Research
Ron Hilditch uses photometry and spectroscopy to establish the masses, radii, temperatures and luminosities of stars in eclipsing binary systems as direct tests of stellar
evolution for single stars and interacting binary stars. These data yield direct
determinations of distance to these binaries, independent of all other techniques, that
serve as critical tests of the distances to Local Group galaxies.

Hollis, D
University of Paisley

Hooley, CA
University of St Andrews

Current Research

My current research is theoretical, and deals mainly with problems involving strong
correlation, i.e. those where particles cannot be thought of as roughly independent from
each other. This includes: work on electrons in magnets, metamagnets, and
superconductors at low temperatures; some aspects of nuclear theory; and also work
relating to some recent experiments in ultracold atom gases. I am particularly interested
in such phenomena when they occur in systems far from equilibrium, as this area of
theory is especially underdeveloped.

Horne, KD
University of St Andrews

Results from the Wide Angle Search for Planets Prototype (WASP0) - III. Planet hunting in the
Draco field
Kane, SR; Cameron, AC; James, D; Lister, TA; Pollacco, DL; Street, RA; Tsapras, Y
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 364, Is. 3, 1091-1103, 2005

Results from the wide angle search for planets prototype (WASP0) - II. Stellar variability in the Pegasus field
Kane, SR; Lister, TA; Cameron, AC; James, D; Pollacco, DL; Street, RA; Tsapras, Y
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 362, Is. 1, 117-126, 2005

A jovian-mass planet in microlensing event OGLE-2005-BLG-071
OGLE Collaborat; muFUN Collaborat; MOA Collaborat; PLANET RoboNet
Collaborat
ASTROPHYSICAL JOURNAL

A dearth of planetary transits in the direction of NGC 6940
Hood, B; Cameron, AC; Kane, SR; Bramich, DM; Street, RA; Bond, IA; Penny, AJ;
Tsapras, Y; Quirrenbach, A; Safizadeh, N; Mitchell, D; Cooke, J
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
A survey for planetary transits in the field of NGC 7789
Bramich, DM; Bond, IA; Street, RA; Cameron, AC; Hood, B; Cooke, J; James, D; Lister, TA; Mitchell, D; Pearson, K; Penny, A; Quirrenbach, A; Safizadeh, N; Tsapras, Y
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 359, Is. 3, 1096-1116, 2005

Full characterization of binary-lens event OGLE-2002-BLG-069 from PLANET observations
Kubas, D; Cassan, A; Beaulieu, JP; Coutures, C; Dominik, M; Albrow, MD; Brillant, S; Caldwell, JAR; Dominis, D; Donatowicz, J; et al.
ASTRONOMY & ASTROPHYSICS
Vol. 435, Is. 3, 941-948, 2005

HST/FOS time-resolved spectral mapping of IP Pegasi at the end of an outburst
Saito, RK; Baptista, R
ASTRONOMY & ASTROPHYSICS
Vol. 433, Is. 3, 1085-U93, 2005

Variable stars in the field of open cluster NGC 6819 - II
Street, RA; Lister, TA; Penny, A; Tsapras, Y; Quirrenbach, A; Safizadeh, N; Cooke, J; Mitchell, D; Cameron, AC
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 358, Is. 3, 795-812, 2005

Fireballs, flares, and flickering: A semianalytic, LTE, explosive model from accretion disks to supernovae
Pearson, KJ; ; Skidmore, W
ASTROPHYSICAL JOURNAL
Vol. 619, Is. 2, Part 1, 999-1013, 2005

Current Research
Keith Horne uses robotic telescopes to hunt for extrasolar planets using transits for hot Jupiters and microlensing for cool Earths. He uses reverberation mapping to resolve accretion discs and emission-line regions in active galactic nuclei, measuring black hole masses, accretion rates, and luminosity distances. He also works on conformal gravity as an alternative to dark matter and dark energy.

Hossack, W
University of Edinburgh
Hough, J
University of Glasgow

Thermal noise and material issues for gravitational wave detectors
Rowan, S; Crooks, DRM
PHYSICS LETTERS A
Vol. 347, Is. 01-Mar, 25-32, 2005

Laser interferometry for the detection of gravitational waves
Rowan, S
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, 2005

The LTP experiment on the LISA Pathfinder mission
Anza, S; Armano, M; Balaguer, E; Benedetti, M; Boatella, C; Bosetti, P; Bortoluzzi, D; Brandt, N; Braxmaier, C; Caldwell, M; Carbone, I; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

Successful testing of the LISA Technology Package (LTP) interferometer engineering model
Heinzel, G; Braxmaier, C; Caldwell, M; Danzmann, K; Draaisma, F; Garcia, A; Jennrich, O; Johann, U; Killow, C; Middleton, K; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

LTP interferometer - noise sources and performance
Robertson, D; Killow, C; Ward, H; Heinzel, G; Garcia, A; Wand, V; Johann, U; Braxmaier, C
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; Barr, BW; Berukoff, S; Bunkowski, A; Cagnoli, G; Cantley, CA; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

Hydroxide-catalysis bonding for stable optical systems for space
Elliffe, EJ; Bogenstahl, J; Deshpande, A; Hough, J; Killow, C; Reid, S; Robertson, D; Rowan, S; Ward, H; Cagnoli, G
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

The search for gravitational waves
Rowan, S
PHYSICS WORLD
Vol. 18, Is. 1, 37-41, 2005

The search for gravitational waves
Hough, J; Rowan, S; Sathyaprakash, BS
JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS
And **LIGO Scientific** Collaboration, **TAMA** Collaboration

Current Research
Gravitational Wave Detection on ground (GEO 600 and Advanced LIGO) and in space (LISA); ultra stable lasers, ultra sensitive mechanical systems, and investigation of materials of ultra-low mechanical loss.
UK PI on GEO 600 Gravitational Wave Detector (AEI Hannover/Golm, Glasgow, Cardiff consortium), CoI on Advanced LIGO, LISA Pathfinder, member of the LISA International Science Team.

**Hourahine, B**
University of Strathclyde, Department of Physics

*Interstitial H-2 in germanium by Raman scattering and ab initio calculations*
Hiller, M; Lavrov, EV; Weber, J; Jones, R; Briddon, PR
PHYSICAL REVIEW B
Vol. 72, Is. 15, 153201, 2005

*Recent advancements in the development of radiation hard semiconductor detectors for S-LHC*
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol 552, Is.1-2, 7, 2005

*Electronic behavior of rare-earth dopants in AlN: A density-functional study*
PHYSICAL REVIEW B
Vol. 72, Is. 7, 073205, 2005

*Vibrational properties of elemental hydrogen centres in Si, Ge and dilute SiGe alloys*
Balsas A, Torres VJB, Coutinho J, et al.
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 22, S2155, 2005

*Development of radiation tolerant semiconductor detectors for the Super-LHC*
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 1-2, 99, 2005

*Radiation-hard semiconductor detectors for SuperLHC*
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
Ireland, DG
University of Glasgow

Near-threshold measurement of the He-4(\gamma,n) reaction
Nilsson, B; Adler, JO; Andersson, BE; Annand, JRM; Akkurt, I; Boland, MJ; Crawford, GI; Fissum, KG; Hansen, K; Harty, PD; et al.
PHYSICS LETTERS B
Vol. 626, 65-71, 2005

Beam-helicity asymmetries in double-charged-pion photoproduction on the proton
Strauch, S; Berman, BL; Adams, G; Ambrozewicz, P; Anghinolfi, M; Asavapibhop, B; Asryan, G; Audit, G; Avakian, H; Bagdasaryan, H; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 16, 162003, 2005

Exclusive photoproduction of the cascade (\Xi) hyperons
Price, JW; Nefkens, BMK; Ducote, JL; Goetz, JT; Adams, G; Ambrozewicz, P; Anciant, E; Anghinolfi, M; Asavapibhop, B; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 5, 58201, 2005

Comparison between the transverse responses of the reactions C-12(e, e'p)B-11 and C-12(\gamma, p)B-11
Morrow, SA; Arneil, J; Aschenauer, EC; van Batenburg, MF; Blok, HP; Boersma, DJ; Branford, D; Davinson, T; DeMeyer, G; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 1, 14607, 2005

Exclusive rho(0) meson electroproduction from hydrogen at CLAS
Hadjidakis, C; Guidal, M; Garcon, M; Laget, JM; Smith, ES; Vanderhaeghen, M; Adams, G; Ambrozewicz, P; Anciant, E; et al.
PHYSICS LETTERS B
Vol. 605, Is. 38810, 256-264, 2005

And CLAS Collaboration

Current Research
Study of the properties of nucleons and their excited states, in particular the search for predicted states which are as yet unobserved. The use of new experimental techniques to measure polarisation observables. Investigation of nucleon interactions in few-body systems. Use of biologically-inspired computing techniques in the analysis of data.
Jardine, MM
University of St Andrews

A further "degree of freedom" in the rotational evolution of stars
Holzwarth, V
ASTRONOMY & ASTROPHYSICS
Vol. 444, Is. 3, 661-671, 2005

Slingshot prominences above stellar X-ray coronae
van Ballegooijen, AA
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 361, Is. 4, 1173-1179, 2005

A simple model for the saturation of coronal X-ray emission of rapidly rotating late-type stars
Ryan, RD; Neukirch, T;
ASTRONOMY & ASTROPHYSICS
Vol. 433, Is. 1, 323-334, 2005

Inferring coronal structure from X-ray light curves and Doppler shifts: A Chandra study of AB Doradus
Hussain, GAJ; Brickhouse, NS; Dupree, AK; van Ballegooijen, AA; Hoogerwerf, R; Cameron, AC; Donati, JF; Favata, F
ASTROPHYSICAL JOURNAL
Vol. 621, Is. 2, Part 1, 999-1008, 2005

Jaroszynski, DA
University of Strathclyde, Department of Physics

Superradiant linear raman amplification in plasma using a chirped pump pulse
Ersfeld, B
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 16, 165002, 2005

Laser plasma acceleration of electrons: Towards the production of monoenergetic beams
Krushelnick, K; Najmun, Z; Mangles, SPD; Thomas, AGR; Wei, MS; Walton, B; Gopal, A; et al.
PHYSICS OF PLASMAS
Vol. 12, Is. 5, 56711, 2005

Efficiency and energy spread in laser-wakefield acceleration
Reitsma, AJW; Cairns, RA; Bingham, R
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 8, 85004, 2005

Interaction mechanism of some alkyl iodides with femtosecond laser pulses
Kosmidis, C; Siozos, P; Kaziannis, S; Robson, L; Ledingham, KWD; McKenna, P;
JOURNAL OF PHYSICAL CHEMISTRY A
Vol. 109, Is. 7, 1279-1285, 2005
Current Research
Our group is investigating radiation-plasma interactions using high power lasers at Strathclyde and large European facilities. The group of experimentalists and theoreticians explores new methods of harnessing laser driven plasma waves as light amplifiers, and as compact accelerators, which could revolutionise the development of high energy accelerators and light sources based on synchrotron emission and free-electron lasers (FELs). These "table-top" synchrotrons and FELs should be capable of producing brilliant sub-10 femtosecond duration radiation pulses, as potential time-resolving tools for studying the evolution of the structure of matter on unprecedented time scales. The group also explores high harmonic generation in atoms and other topical plasma problems such as plasma as a non-linear optical medium. The group leads the UK ALPHA-X consortium to develop plasma wakefield accelerators.

Jeffers, J
University of Strathclyde, Department of Physics

Quantum theory of matter-wave detection
Whitlock, NK; Cresser, JD; Barnett, SM;
JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS
Vol. 38, Is. 17, 3117-3128, 2005

Quantum nature of laser light
Pegg, DT
JOURNAL OF MODERN OPTICS
Vol. 52, Is. 13, 1835-1856, 2005

Spatial response of cavity systems
Scroggie, AJ; McCartney, G; Oppo, GL
PHYSICAL REVIEW A
Vol. 72, Is. 2, 23824, 2005

Reversible soliton motion
Scroggie, AJ; McCartney, G; Oppo, GL
PHYSICAL REVIEW E
Vol. 71, Is. 4, Part 2, 46602, 2005

Current Research
(1) Measurements and decoherence in quantum physics. Open quantum systems. Master equations.
(2) Quantum information, and in particular optical implementations of quantum information systems. Application of retrodictive quantum theory to quantum information.
Jones, JDC
Heriot-Watt University

The effects of progressive wear on the frequency characteristic of acoustic emission acquired during face milling
Jakobsen, ML; Wilkinson, P; Barton, JS; Reuben, RL; Harvey, D
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART B-JOURNAL OF ENGINEERING MANUFACTURE
Vol. 219, Is. 11, 803-810, 2005

Modelling and calibration of bending strains for iterative laser forming
McBride, R; Bardin, F; Gross, M; Hand, DP; Moore, AJ
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 22, 4027-4036, 2005

Developments towards controlled three-dimensional laser forming of continuous surfaces
Edwardson, SP; Abed, E; French, P; Dearden, G; Watkins, KG; McBride, R; Hand, DP; Moore, AJ
JOURNAL OF LASER APPLICATIONS
Vol. 17, Is. 4, 247-255, 2005

Silva-Lopez, M; Fender, A; MacPherson, WN; Barton, JS
OPTICS LETTERS
Vol. 30, Is. 23, 3129-3131, 2005

Process control of laser conduction welding by thermal imaging measurement with a color camera
Bardin, F; Morgan, S; Williams, S; McBride, R; Moore, AJ; Hand, DP
APPLIED OPTICS
Vol. 44, Is. 32, 6841-6848, 2005

Transverse load and orientation measurement with multicore fiber Bragg gratings
Silva-Lopez, M; MacPherson, WN; Li, C; Moore, AJ; Barton, JS; Zhao, DH; Zhang, L; Bennion, I
APPLIED OPTICS
Vol. 44, Is. 32, 6890-6897, 2005

Component position measurement through polymer material by broadband absolute distance interferometry
Harrison, PB; Maier, RRJ; Barton, JS; McCulloch, S; Burnell, G
MEASUREMENT SCIENCE & TECHNOLOGY
Vol. 16, Is. 10, 2066-2071, 2005

Single-mode mid-IR guidance in a hollow-core photonic crystal fiber
Shephard, JD; MacPherson, WN; Maier, RRJ; Hand, DP; Mohebbi, M; George, AK; Roberts, PJ; Knight, JC
OPTICS EXPRESS
Vol. 13, Is. 18, 7139-7144, 2005

Improved hollow-core photonic crystal fiber design for delivery of nanosecond pulses in laser micromachining applications
Optical techniques for real-time penetration monitoring for laser welding
Bardin, F; Cobo, A; Lopez-Higuera, JM; Collin, O; Aubry, P; Dubois, T; Hogstrom, M; Nylen, P; Jonsson, P; Hand, DP
APPLIED OPTICS
Vol. 44, Is. 21, 4582-4588, 2005

Absolute fringe order calculation using optimised multi-frequency selection in full-field profilometry
Towers, CE; Towers, DP
OPTICS AND LASERS IN ENGINEERING
Vol. 43, Is. 7, 788-800, 2005

Finite-element analysis and experimental results for a microstructured fiber with enhanced hydrostatic pressure sensitivity
MacPherson, WN; Rigg, EJ; Kumar, VVRK; Knight, JC; Russell, PS
JOURNAL OF LIGHTWAVE TECHNOLOGY
Vol. 23, Is. 3, 1227-1231, 2005

Optoelectronic device for non-invasive focal point measurement and control of the laser welding process
Cobo, A; Bardin, F; Mirapeix, J; Hand, DP; Lopez-Higuera, JM
MEASUREMENT SCIENCE & TECHNOLOGY
Vol. 16, Is. 3, 2005

Closed-loop power and focus control of laser welding for full-penetration monitoring
Bardin, F; Cobo, A; Lopez-Higuera, JM; Collin, O; Aubry, P; Dubois, T; Hogstrom, M; Nylen, P; Jonsson, P; Hand, DP
APPLIED OPTICS
Vol. 44, Is. 1, 13-21, 2005

Current Research
Our group specialises in the physics and technology of optical fibres for beam delivery and instrumentation, with an emphasis on material processing and interferometry. Of particular current interest are the properties of microstructured fibres, especially of the photonic bandgap type, allowing application at wavelengths and energy densities unfeasible with conventional materials.

Kaiser, R
University of Glasgow

Measurement of the tensor structure function b(1) of the deuteron
Airapetian, A; Akopov, N; Akopov, Z; Amarian, M; Ammosov, VV; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 24, 242001, 2005
The time-of-flight technique for the HERMES experiment
Airapetian, A; Akopov, N; Amarian, M; Avakian, H; Avetissian, A; Avetisyan, E;
Filippone, BW; Zohrabian, H
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 540, Is. 02-Mar, 305-310, 2005

The HERMES polarized hydrogen and deuterium gas target in the HERA electron storage ring
Airapetian, A; Akopov, N; Akopov, Z; Amarian, M; Andrus, A; Aschenauer, EC; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 540, Is. 1, 68-101, 2005

And HERMES Collaboration

Kar, A
Heriot-Watt University

Optically active erbium-doped waveguides fabricated using a single-sol-gel-deposition technique
Thomson, RR; Bookey, HT; Ur-Rehman, H; Liu, S; Suyal, N
JOURNAL OF LIGHTWAVE TECHNOLOGY
Vol. 23, Is. 12, 4249-4256, 2005

Erbium-doped waveguide fabrication via reactive pulsed laser deposition of erbium-doped oxyfluoride-silicate glass
Thomson, RR; Bookey, HT; Taghizadeh, MR; Klini, A; Fotakis, C; Romano, E; Caricato, AP; Martino, M; Shen, S; Jha, A
ELECTRONICS LETTERS
Vol. 41, Is. 25, 1376-1377, 2005

Active waveguide fabrication in erbium-doped oxyfluoride silicate glass using femtosecond pulses
Thomson, RR; Campbell, S; Blewett, IJ; Reid, DT; Shen, S; Jha, A
APPLIED PHYSICS LETTERS
Vol. 87, Is. 12, 121102, 2005

All-optical switching potentiality in Fabry-Perot devices containing poly-DCHD
Camacho, MA; Wherrett, BS; Bakarezos, M; Rangel-Rojo, R; Yamada, S; Matsuda, H;
Kasai, H; Nakanishi, H
OPTICS COMMUNICATIONS
Vol. 251, Is. 04-Jun, 376-387, 2005

Characterisation and optimisation of a dual-channel picosecond gain-switched DFB laser system for use as a pump-probe source
Bookey, HTG
OPTICS COMMUNICATIONS
Vol. 248, Is. 01-Mar, 229-239, 2005
Excitonic signatures in the photoluminescence and terahertz absorption of a GaAs/Al$_x$Ga$_{1-x}$As multiple quantum well
Galbraith, I; Chari, R; Pellegrini, S; Phillips, PJ; Dent, CJ; van der Meer, AFG; Clarke, DG
PHYSICAL REVIEW B
Vol. 71, Is. 7, 73302, 2005

White-light filaments induced by diffraction effects
Cook, K; Lamb, RA
OPTICS EXPRESS
Vol. 13, Is. 6, 2025-2031, 2005

Coherent array of white-light continuum filaments produced by diffractive microlenses
Cook, K; McGeorge, R; Taghizadeh, MR; Lamb, RA
APPLIED PHYSICS LETTERS
Vol. 86, Is. 2, 21105, 2005

Kellie, JD
University of Glasgow

Beam-helicity asymmetries in double-charged-pion photoproduction on the proton
Strauch, S; Berman, BL; Adams, G; Ambrozewicz, P; Anghinolfi, M; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 16, 162003, 2005

The selection and performance of diamond radiators used in coherent bremsstrahlung experiments
Clive, PJM; Yang, GL; Beck, R; Evans, BC; Gordon, C; Hall, C; Harris, JW; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 545, Is. 01-Feb, 164-180, 2005

Exclusive photoproduction of the cascade (Xi) hyperons
Price, JW; Nefkens, BMK; Ducote, JL; Goetz, JT; Adams, G; Ambrozewicz, P; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 5, 8201, 2005

Exclusive rho(0) meson electroproduction from hydrogen at CLAS
Hadjidakis, C; Guidal, M; Garcon, M; Lager, JM; Smith, ES; Vanderhaeghen, M; et al.
PHYSICS LETTERS B
Vol. 605, Is. 03-Apr, 256-264, 2005

And CLAS Collaboration

Current Research
I am primarily interested in hadronic physics and studying the nature of the colour force between quarks which are the constituent particles of hadrons. To this end I am closely involved in designing magnetic spectrometer systems for the new GlueX and Panda
facilities in the US and Germany, which will allow investigations of unprecedented accuracy into the properties of hadrons.

**Kennedy, AD**

University of Edinburgh

*Diagrammatic Young projection operators for U(n)*

Elvang, H; Cvitanovic, P

JOURNAL OF MATHEMATICAL PHYSICS
Vol. 46, Is. 4, 43501, 2005

*Algorithms for lattice QCD with dynamical fermions*

NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 190-203, 2005

*Exact 2+1 flavour RHMC simulations*

Clark, MA; Sroczynski, Z

NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 835-837, 2005

*Accelerating fermionic molecular dynamics*

Clark, MA

NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS
Vol. 140, 838-840, 2005

**Kenway, RD**

University of Edinburgh

*QCDgrid: A Grid Resource for Quantum Chromodynamics*


JOURNAL OF GRID COMPUTING
Vol. 3, 113-130, 2005

And **UKQCD** collaboration

Current Research

Prof Richard Kenway is carrying out simulations of QCD with 2+1 light quark flavours in order to compute a range of hadronic masses and phenomenologically important matrix elements, using the QCDOC machines at Edinburgh and Brookhaven, as part of an international collaboration involving physicists in the UK, Japan and the USA.
Kikugawa, N
University of St Andrews

Dynamical properties of charged stripes in La$_{2-x}$Sr$_x$CuO$_4$
Tassini, L; Venturini, F; Zhang, QM; Hackl, R; Fujita, T
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 11, 117002, 2005

Tunneling properties at the interface between superconducting Sr$_2$RuO$_4$ and a Ru microinclusion
Kawamura, M; Yaguchi, H; Maeno, Y; Takayanagi, H
JOURNAL OF THE PHYSICAL SOCIETY OF JAPAN
Vol. 74, Is. 2, 531-534, 2005

Kirk, K
University of Paisley

Ultrasonic thin film transducers for high-temperature NDT
Lee, CK; Cochran, S
INSIGHT
Vol. 47, Is. 2, 85-87, 2005

Koenig, F
University of St Andrews

Efficient and spectrally bright source of polarization-entangled photons
Koenig, F; Mason, EJ; Wong, FNC; Albota, MA
PHYSICAL REVIEW A
Vol. 71, Part B, 33805, 2005

Current Research
The experimental quantum optics group investigates nonlinear interactions of light in optical fibres. We are particularly interested in quantum effects such as entanglement generation, distillation, or ell tests. The fibre technology is readily available from telecommunications industries. We investigate the latest photonic crystal fibres offering unique dispersive and nonlinear properties. For example, four-wave-mixing produces degenerate photon-pairs in a single mode.
**Kontar, E**
University of Glasgow

*Problems and progress in flare fast particle diagnostics*
Brown, JC
ENERGY RELEASE AND PARTICLE ACCELERATION AT THE SUN AND IN THE HELIOSPHERE
Vol. 35, Is. 10, 1675-1682, 2005

*Multi-wavelength analysis of high-energy electrons in solar flares: A case study of the August 20,2002 flare*
Kasparova, J; Karlicky, M; Schwartz, RA; Dennis, BR
SOLAR PHYSICS
Vol. 232, Is. 01-Feb, 63-86, 2005

*Fast electron slowing-down and diffusion in a high temperature coronal X-ray source*
Galloway, RK; MacKinnon, AL; Helander, P
ASTRONOMY & ASTROPHYSICS
Vol. 438, Is. 3, 1107-1114, 2005

*Regularized energy-dependent solar flare hard X-ray spectral index*
Mackinnon, AL
SOLAR PHYSICS
Vol. 227, Is. 2, 299-310, 2005

*Determination of electron flux spectra in a solar flare with an augmented regularization method: Application to RHESSI data*
Emslie, AG; Piana, M; Massone, AM; Brown, JC
SOLAR PHYSICS
Vol. 226, Is. 2, 317-325, 2005

*Nonlinear wave interactions as a model for naturally enhanced ion acoustic lines in the ionosphere*
Pecseli, HL
GEOPHYSICAL RESEARCH LETTERS
Vol. 32, Is. 5, L05110, 2005

Current Research
Solar physics: solar flares, X-ray spectroscopy, solar radio bursts, acceleration and propagation of energetic particles in the solar corona and interplanetary space; Plasma Physics: beam-plasma interactions, coherent plasma emission, turbulence; Ionospheric and solar-terrestrial physics: solar energetic particles, plasma waves and energetic particles in the ionosphere; Inverse problems and regularised methods.
Her current research interests are in the field of quantum optics of ultrashort light pulses and quantum information using continuous variables of light. The latter is focused on generation and evaluation of bright beam entanglement and its applications in experimental quantum communication.

Krauss, TF
University of St Andrews

Ultrafast nonlinear response of AlGaAs/InAlGaAs MQW photonic crystal waveguides
Murzyn, P; Garcia-Deniz, AZ; Fox, AM; Wells, JPR; Whittaker, DM; Skolnick, MS; Roberts, JS
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE
Vol. 202, Is. 14, 2653-2656, 2005

Effect of gain localization in circular-grating distributed feedback lasers
Turnbull, GA; Carleton, A; Tahraouhi, A; Samuel, IDW; Barlow, GF; Shore, KA
APPLIED PHYSICS LETTERS
Vol. 87, Is. 20, 201101, 2005

Low tuning current semiconductor coupled-cavity lasers incorporating Bragg reflectors
Brown, DH; Flynn, MB; O’Faolain, L.
IEEE PHOTONICS TECHNOLOGY LETTERS
Vol. 17, Is. 11, 2262-2264, 2005

Influence of grating characteristics on the operation of circular-grating distributed-feedback polymer lasers
Turnbull, GA; Carleton, A; Barlow, GF; Tahraouhi, A; Shore, KA; Samuel, IDW
JOURNAL OF APPLIED PHYSICS
Vol. 98, Is. 2, 23105, 2005

Reflection and emission of Brillouin zone edge states for active photonic crystal waveguides
Bristow, AD; Garcia-Deniz, A; Fox, AM; Whittaker, DM; Skolnick, MS; Hopkinson, M
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, S270-S275, 2005
Experimental verification of numerically optimized photonic crystal injector, Y-splitter, and bend
Ayre, M; Karle, TJ; Wu, IJ; Davies, T
IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS
Vol. 23, Is. 7, 1390-1395, 2005

Compact polarization converter in InP-based material
Kotlyar, MV; Bolla, L; Midrio, M; O'Faolain, L
OPTICS EXPRESS
Vol. 13, Is. 13, 5040-5045, 2005

All-optical control of microfluidic components using form birefringence
Neale, SL; Macdonald, MP; Dholakia, K
NATURE MATERIALS
Vol. 4, Is. 7, 530-533, 2005

Local probing of Bloch mode dispersion in a photonic crystal waveguide
Engelen, RJP; Karle, TJ; Gersen, H; Korterik, JP; Kuipers, L; van Hulst, NF
OPTICS EXPRESS
Vol. 13, Is. 12, 4457-4464, 2005

Electro-optic tuning of InP-based microphotonic Fabry-Perot filters
Kotlyar, MV; O'Faolain, L; Krysa, AB
JOURNAL OF LIGHTWAVE TECHNOLOGY
Vol. 23, Is. 6, 2169-2174, 2005

Integrated chirp compensation in a monolithic passively mode-locked semiconductor diode laser
Flynn, MB; O'Faolain, L
APPLIED PHYSICS LETTERS
Vol. 86, Is. 22, 221104, 2005

Dual lattice photonic-crystal beam splitters
Wu, IJ; Mazilu, M; Gallet, JF
APPLIED PHYSICS LETTERS
Vol. 86, Is. 21, 211106, 2005

Direct observation of Bloch harmonics and negative phase velocity in photonic crystal waveguides
Gersen, H; Karle, TJ; Engelen, RJP; Bogaerts, W; Korterik, JP; van Hulst, NF; Kuipers, L
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 12, 123901, 2005

Kerr-effect-induced passive Q switching of a monolithic semiconductor diode laser
Flynn, MB; O'Faolain, L
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS
Vol. 22, Is. 4, 792-795, 2005

Reprocessing of thermally oxidized aluminum arsenide (AlAs) in epitaxial multilayers without delamination
Hobbs, L; Eddie, I; Erwin, G; Bryce, AC; De la Rue, RM; Roberts, JS; Mccomb, DW; Mackenzie, M
JOURNAL OF ELECTRONIC MATERIALS
Electrically tunable multiquantum-well InGaAsP-InGaAsP microphotonic filter
Kotlyar, MV; O’Faolain, L; Krysa, AB
IEEE PHOTONICS TECHNOLOGY LETTERS
Vol. 17, Is. 4, 837-839, 2005

Real-space observation of ultraslow light in photonic crystal waveguides
Gersen, H; Karle, TJ; Engelen, RJP; Bogaerts, W; Korterik, JP; van Hulst, NF; Kuipers, L
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 7, 73903, 2005

Current Research
Photonic crystals allow the control and manipulation of light on a wavelength scale. This leads to more efficient light emitters and nonlinear switching with very low power. Tailoring the propagation of light in photonic crystal waveguides gives rise to dispersion control for telecommunications systems and allows slowing down light, eventually leading to all-optical memory applications. Similar principles can be applied to biomedical research, where a similar control of the properties of light allows optical trapping and sensing of cells and proteins.

Kukula, MJ
University of Edinburgh

Land, DV
University of Glasgow

Langford, N
University of Strathclyde, Department of Physics

Real-time trace-level detection of carbon dioxide and ethylene in car exhaust gases
McCulloch, MT; Duxbury, G
APPLIED OPTICS
Vol. 44, Is. 14, 2887-2894, 2005

Efficient Raman shifting of high-energy picosecond pulses into the eye-safe 1.5-μm spectral region by use of a KGd(WO₄)₂ crystal
Major, A; Aitchison, JS; Smith, PWE; Ferguson, AI
OPTICS LETTERS
Vol. 30, Is. 4, 421-423, 2005

Quantum cascade semiconductor infrared and far-infrared lasers: from trace gas sensing to non-linear optics
Current Research

Development and application of near and mid infrared laser systems for the detection of gases for atmospheric pollution monitoring and medical diagnostics. Study of non-linear optical processes both in molecular gases and solids.

Lawrence, A
University of Edinburgh

*Properties of FIRBACK-ELAIS 175-μm sources in the ELAIS N2 region*
Taylor, EL; Mann, RG; Efstathiou, AN; Babbedge, TSR; Rowan-Robinson, M; et al.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 361, Is. 4, 1352-1374, 2005

*A complete multiwavelength characterization of faint CHANDRA X-ray sources seen in the Spitzer Wide-Area Infrared Extragalactic (SWIRE) Survey*
Franceschini, A; Manners, J; Polletta, MD; Lonsdale, C; Gonzalez-Solares, E; et al.
ASTRONOMICAL JOURNAL
Vol. 129, Is. 5, 2074-2101, 2005

*Short time-scale optical variability of the dwarf Seyfert nucleus in NGC 4395*
Skelton, JE; Pappa, A; Lira, P; Almaini, O
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 358, Is. 3, 781-794, 2005

*The SCUBA Half-Degree Extragalactic Survey - I. Survey motivation, design and data processing*
Mortier, A MJ; Serjeant, S; Dunlop, JS; Scott, SE; Ade, P; Alexander, D; Almaini, O; Aretxaga, I; Baugh, C; Benson, AJ;
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Volume 363, Issue 2, 563-580, 2005

*Blue, green and red bumps in active galactic nuclei*
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Volume 363, Issue 1, 57-63, 2005

Lepingham, KWD
University of Strathclyde, Department of Physics

*Laser accelerated ions and electron transport in ultra-intense laser matter interaction*
Roth, M; Brambrink, E; Audebert, P; Blazevic, A; Clarke, R; Cobble, J; Cowan, TE; et al.
LASER AND PARTICLE BEAMS
Vol. 23, Is. 1, 95-100, 2005
Laser induced nuclear physics and applications  
NUCLEAR PHYSICS A  
Vol. 752, 633C-644C, 2005  

Broad energy spectrum of laser-accelerated protons for spallation-related physics  
McKenna, P; Shimizu, S; Yang, JM; Robson, L; McCanny, T; Galy, J; Magill, J; Clarke, RJ; Neely, D; Norreys, PA; Singhal, RP; Krushelnick, K; Wei, MS  
PHYSICAL REVIEW LETTERS  
Vol. 94, Is. 8, 84801, 2005  

Interaction mechanism of some alkyl iodides with femtosecond laser pulses  
Kosmidis, C; Siozos, P; Kaziannis, S; Robson, L; McKenna, P; Jaroszynski, DA  
JOURNAL OF PHYSICAL CHEMISTRY A  
Vol. 109, Is. 7, 1279-1285, 2005  

Volumetric intensity dependence on the formation of molecular and atomic ions within a high intensity laser focus  
Robson, L; McKenna, P; McCanny, T; Shimizu, S; Yang, JM; Wahlstrom, CG; Lopez-Martens, R; Varju, K; Johnsson, P; Mauritsson, J  
JOURNAL OF THE AMERICAN SOCIETY FOR MASS SPECTROMETRY  
Vol. 16, Is. 1, 82-89, 2005  

Lee, SL  
University of St Andrews  

Coexistence and coupling of superconductivity and magnetism in thin film structures  
Drew, AJ; Charalambous, D; Potenza, A; Marrows, C; Luetkens, H; Suter, A; Prokscha, T; Khasanov, R; Morenzoni, E; Ucko, D; Forgan, EM  
PHYSICAL REVIEW LETTERS  
Vol. 95, Is. 19, 197201, 2005  

mu SR studies of layered organic superconductors: vortex phases, penetration depth and anomalous superfluid properties  
Pratt, FL; Blundell, SJ; Lancaster, T; Brooks, ML; Toyota, N; Sasaki, T  
SYNTHETIC METALS  
Vol. 152, Is. 01-Mar, Part 1 Sp. Iss. SI, 417-420, 2005  

Agglomeration and sintering in annealed FePt nanoparticle assemblies studied by small angle neutron scattering and x-ray diffraction  
Thomson, T; Toney, MF; Dewhurst, CD; Ogrin, FY; Oates, CJ; Sun, S  
PHYSICAL REVIEW B  
Vol. 72, Is. 6, 64441, 2005
Leonhardt, U
University of St Andrews

The perfectly matched layer in numerical simulations of nonlinear and matter waves
Farrell, C
JOURNAL OF OPTICS B-QUANTUM AND SEMICLASSICAL OPTICS
Vol. 7, Is. 1, 1-4, 2005

Current Research
Ulf Leonhardt does research on ideas for artificial black holes and the geometry of optical media. These fields connect branches of quantum optics, the condensed-matter physics of quantum gases and general relativity. He is working on an experiment to demonstrate Hawking radiation in the optical domain and on ideas for invisibility devices. The experiment and demonstrations of such invisibility devices are based on modern metamaterials.

Liang, X
University of Paisley

Spectroscopy of Ne and Na isotopes: Preliminary results from a EUROBALL plus binary reaction spectrometer experiment
Keyes, KL; Papenberg, A; Chapman, R; Ollier, J; Burns, MJ; Labiche, M; Spohr, KM; Amzal, N; Beck, C; Bednarczyk, P; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 25, 431-432, 2005

The CLARA-PRISMA setup installed at LNL: first results
Gadea, A; Marginean, N; Corradi, L; Lenzi, SM; Ur, CA; Farnea, E; de Angelis, G; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1443-S1448, 2005

Nucleon transfer via (d,p) using TIARA with a Ne-24 radioactive beam
Catford, WN; Timis, CN; Lemmon, RC; Labiche, M; Orr, NA; Caballero, I; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1655-S1661, 2005

Study of transfer reactions in inverse kinematics with the TIARA array
Labiche, M; Timis, CN; Lemmon, RC; Catford, WN; Chapman, R; Amzal, N; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1691-S1695, 2005

High spin studies of the Er and Tm isotopes around A=166
Burns, MJ; Chapman, R; Spohr, KM; Ollier, J; Labiche, M; Farnea, E; Axiotis, M; Martinez, T; Napoli, DR; Ur, CA; Kroll, T
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1827-S1830, 2005
Spectroscopy of Ne, Na and Mg isotopes approaching the Island of Inversion
Keyes, KL; Papenberg, A; Chapman, R; Ollier, J; Burns, MJ; Labiche, M; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1903-S1906, 2005

Intruder configurations in neutron-rich P and S isotopes
Ollier, J; Hodsdon, A; Chapman, R; Burns, M; Keyes, K; Labiche, M; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1935-S1938, 2005

Intruder configurations in neutron-rich P-34
Ollier, J; Chapman, R; Labiche, M; Spohr, KM; Davison, M; de Angelis, G; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 3, 34316, 2005

Current Research
Dr. Liang’s current research is focused on the evolution of shell structure for neutron-rich nuclei. This is an exciting new research topic which is based on the discovery that, at large neutron excess, the nuclear shell model, one of the basic foundations of nuclear physics for the past 50 years, fails to reproduce experimental observation.

Livingston, KD
University of Glasgow

Measurement of the $G$ asymmetry for the gamma $p \rightarrow N \pi$ channels in the Delta(1232) resonance region
Ahrens, J; Altieri, S; Annand, JRM; Arends, HJ; Beck, R; Braghieri, A; d’Hose, N; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 26, Is. 1, 135-140, 2005

Beam-helicity asymmetries in double-charged-pion photoproduction on the proton
Strauch, S; Berman, BL; Adams, G; Ambrozewicz, P; Anghinolfi, M; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 16, 162003, 2005

The selection and performance of diamond radiators used in coherent bremsstrahlung experiments
Kellie, JD; Clive, PJM; Yang, GL; Beck, R; Evans, BC; Gordon, C; Hall, C; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 545, Is. 38749, 164-180, 2005

Exclusive photoproduction of the cascade (Xi) hyperons
Price, JW; Nefkens, BMK; Ducote, JL; Goetz, JT; Adams, G; Ambrozewicz, P; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 5, 58201, 2005

Measurement of the electric form factor of the neutron at $Q^2$=0.3-0.8 $(GeV/c)^2$
Current Research
Membership of Two Major International Teams + Gravity Gradiometry

- High-precision displacement sensing, and very low noise electrostatic displacement actuation, for the Laser Interferometer Gravitational-Wave Observatory (LIGO)—with the IGR, Glasgow, Birmingham Uni., and RAL.

- Member of the top-level 6-person Science Team for the Stanford-led STEP (Satellite Test of the Equivalence Principle) experiment.

- And I work on Gravity Gradiometry for the Gravitec Ltd consortium.

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**Long, AR**
University of Glasgow

*Origin of switching noise in GaAs/AlxGa1-xAs lateral gated devices*
Pioro-Ladriere, M; Davies, JH; Sachrajda, AS; Gaudreau, L; Zawadzki, P; Lapointe, J; Gupta, J; Wasilewski, Z; Studenikin, S
PHYSICAL REVIEW B
Vol. 72, Is. 11, 115331, 2005

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**Loveday, J**
University of Edinburgh

*Toroidal anvils for single-crystal neutron studies*
Bull, CL; Guthrie, M; Klotz, S; Philippe, J; Strassle, T; Nelmes, RJ; Hamel, G
HIGH PRESSURE RESEARCH
Vol. 25, Is. 4, 229-233, 2005

*Equation of state of ordinary ice Ih at 145 K under true hydrostatic pressure up to 5 kbar*
Strassle, T; Klotz, S; Braden, M
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 40, S3029-S3033, 2005

*In situ neutron diffraction studies of high density amorphous ice under pressure*
Klotz, S; Strassle, T; Saiotta, AM; Rousse, G; Hamel, G; Nelmes, RJ; Guthrie, M
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 11, S967-S974, 2005

*Nature of the polyamorphic transition in ice under pressure*
Klotz, S; Strassle, T; Nelmes, RJ; Hamel, G; Rousse, G; Canny, B; Chervin, JC; Saitta, AM

PHYSICAL REVIEW LETTERS
Vol. 94, Is. 2, 25506, 2005

**Lu, W**
Heriot-Watt University

*Super-Gaussian mirror for high-field-seeking molecules*
Dong, GJ; Edvadsson, S; Barker, PF

PHYSICAL REVIEW A
Vol. 72, Is. 3, 31605, 2005

*Enhanced cooling of atoms within an optical cavity*
Barker, PF

PHYSICAL REVIEW A
Vol. 72, Is. 2, 25402, 2005

*A probabilistic neural network as the predictive classifier of out-of-hospital defibrillation outcomes*
Yang, ZJ; Yang, ZG; Harrison, RG; Eftestol, T; Steen, PA

RESUSCITATION
Vol. 64, Is. 1, 31-36, 2005

*Cold molecules in pulsed optical lattices*
Dong, GJ; Lu, WP; Barker, PF; Shneider, MN

PROGRESS IN QUANTUM ELECTRONICS
Vol. 29, Is. 1, 1-58, 2005

Current Research
We study the dynamics of atom and molecules in optical fields for the creation of slow and cold molecules for applications in ultra-cold physics. Currently we explore nonlinear and collective phenomena of molecule ensemble in optical cavities to cool molecular ensembles to sub-mK temperatures. We further study nonlinear dynamics in optical systems for the application of optical image processing.

**MacDonald, MP**
University of St Andrews

*All-optical control of microfluidic components using form birefringence*
Neale, SL; Dholakia, K; Krauss, TF

NATURE MATERIALS
Vol. 4, Is. 7, 530-533, 2005
MacGregor, IJ
University of Glasgow

*The selection and performance of diamond radiators used in coherent bremsstrahlung experiments*
Kellie, JD; Clive, PJM; Yang, GL; Beck, R; Evans, BC; Gordon, C; Hall, C; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 545, Is. 01-Feb, 164-180, 2005

*Measurement of the electric form factor of the neutron at Q(2)=0.3-0.8 (GeV/c)^2*
Glazier, DI; Seimetz, M; Annand, JRM; Arenhovel, H; Antelo, MA; Ayerbe, C; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 24, Is. 1, 101-109, 2005

*Measurement of the pi(+) meson polarizabilities via the gamma P -> gamma pi(+)n reaction*
Ahrens, J; Alexeev, VM; Annand, JRM; Arends, HJ; Beck, R; Caselotti, G; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 23, Is. 1, 113-127, 2005

Mackenzie, AP
University of St Andrews

*Phase bifurcation and quantum fluctuations in Sr3Ru2O7*
Green, AG; Grigera, SA; Borzi, RA; Perry, RS; Simons, BD
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 8, 86402, 2005

Current Research
My research interests concern the behaviour of solids in which the independent electron approximation breaks down, and the motion of any one charge carrier is said to be strongly correlated with that of all the others. A huge range of subtle many-body quantum states result from such a situation, the understanding of which represents one of the major challenges of modern physics. My favoured approach is through study of the low temperature properties of extremely pure oxide metals, magnets and superconductors.

MacLaren, I
University of Glasgow

*The first observation of a shear-induced bcc -> fcc transformation in nanocrystalline ferrite*
Ivanisenko, Y; Valiev, RZ; Fecht, HJ
ADVANCED ENGINEERING MATERIALS
Vol. 7, Is. 11, 1011-1014, 2005
Experimental measurement of stress at a four-domain junction in lead zirconate titanate
Schmitt, LA; Fuess, H; Kungl, H; Hoffmann, MJ
JOURNAL OF APPLIED PHYSICS
Vol. 97, Is. 9, 94102, 2005

Microstructure and interface evolution of PtMn bottom spin-filter spin valves induced by stress and unidirectional field annealing
Oksuzoglu, RM; MacLaren, I; Schug, C; Fuess, H
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 26, 4073-4081, 2005

MacPherson, WN
Heriot-Watt University

Strain and temperature sensitivity of a single-mode polymer optical fiber
Silva-Lopez, M; Fender, A; Barton, JS; Jones, JDC
OPTICS LETTERS
Vol. 30, Is. 23, 3129-3131, 2005

Transverse load and orientation measurement with multicore fiber Bragg gratings
Silva-Lopez, M; Li, C; Moore, AJ; Barton, JS; Jones, JDC; Zhao, DH; Zhang, L; Bennion, I
APPLIED OPTICS
Vol. 44, Is. 32, 6890-6897, 2005

Single-mode mid-IR guidance in a hollow-core photonic crystal fiber
Shephard, JD; Maier, RRJ; Jones, JDC; Hand, DP; Mohebbi, M; George, AK; Roberts, PJ; Knight, JC
OPTICS EXPRESS
Vol. 13, Is. 18, 7139-7144, 2005

Fibre interferometer for multi-wavelength interferometry with a femtosecond laser
Towers, CE; Reid, DT; Maier, RRJ; Towers, DP
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, S415-S419, 2005

Finite-element analysis and experimental results for a microstructured fiber with enhanced hydrostatic pressure sensitivity
Rigg, EJ; Jones, JDC; Kumar, VVRK; Knight, JC; Russell, PS
JOURNAL OF LIGHTWAVE TECHNOLOGY
Vol. 23, Is. 3, 1227-1231, 2005

Current Research
Optical fibres offer potential for measurements in harsh environments. Our current research exploits novel fibres and sensor designs to realise these measurements. Microstructured fibres offer potential for Mid IR transmission and are being explored for spectroscopic gas sensing. Multicore fibre offers a means of dynamic strain and shape
measurement and micromachined sensors offer potential for high bandwidth pressure measurement. Further information can be found at www.aop.hw.ac.uk

**Mann, R**  
University of Edinburgh

*Environmental dependence of the structure of brightest cluster galaxies*  
Brough, S; Collins, CA; Burke, DJ; Lynam, PD  
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY  
Vol. 364, Is. 4, 1354-1362, 2005

*Properties of FIRBACK-ELAIS 175-μm m sources in the ELAIS N2 region*  
Taylor, EL; Efthathiou, AN; Babbedge, TSR; Rowan-Robinson, M; et al.  
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY  
Vol. 361, Is. 4, 1352-1374, 2005

*FIRBACK IV. Towards the nature of the 170 μm m source population*  
Dennfied, M; Lagache, G; Mei, S; Ciliegi, P; Dole, H; Taylor, EL; Vaccari, M  
ASTRONOMY & ASTROPHYSICS  
Vol. 440, Is. 1, 5-22, 2005

*Grid boosts job opportunities for physicists in software development*  
PHYSICS WORLD  
Vol. 18, Is. 6, A12-A13, 2005

**Martin, RW**  
University of Strathclyde, Department of Physics

*InGaN nano-ring structures for high-efficiency light emitting diodes*  
Choi, HW; Jeon, CW; Liu, C; Watson, IM; Dawson, MD; Edwards, PR; Tripathy, S; Chua, SJ  
APPLIED PHYSICS LETTERS  
Vol. 86, Is. 2, 21101, 2005

*Selectively excited photoluminescence from Eu-implanted GaN*  
Wang, K; O'Donnell, KP; Katchkanov, V; Nogales, E; Lorenz, K; Alves, E; Ruffenach, S; Briot, O  
APPLIED PHYSICS LETTERS  
Vol. 87, Is. 11, 112107, 2005

*Use of AlInN layers in optical monitoring of growth of GaN-based structures on free-standing GaN substrates*  
Watson, IM; Liu, C; Gu, E; Dawson, MD; Edwards, PR  
APPLIED PHYSICS LETTERS  
Vol. 87, Is. 15, 151901, 2005
Raman-scattering study of the InGaN alloy over the whole composition range
Hernandez, S; Cusco, R; Pastor, D; Artus, I; O'Donnell, KP; Watson, IM; Nanishi, Y; Calleja, E
JOURNAL OF APPLIED PHYSICS
Vol. 98, Is. 1, 13511, 2005

Determination of the Mn concentration in GaMnAs
Zhao, LX; Campion, RP; Fewster, PF; Ber, BY; Kovarsky, AP; Staddon, CR; Wang, KY; Edmonds, KW; Foxon, CT; Gallagher, BL
SEMICONDUCTOR SCIENCE AND TECHNOLOGY
Vol. 20, Is. 5, 369-373, 2005

Roles for aluminium indium nitride insertion layers in fabrication of GaN-based microcavities
Bejtka, K; Rizzi, F; Edwards, PR; Gu, E; Dawson, MD; Watson, IM; Sellers, IR; Semondi, F
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE
Vol. 202, Is. 14, 2648-2652, 2005

Preparation of Cu(In,Ga)Se-2 thin film solar cells by two-stage selenization processes using N-2 gas
Gremenok, VF; Zaretskaya, EP; Zalesski, VB; Bente, K; Schmitz, W; Moller, H
SOLAR ENERGY MATERIALS AND SOLAR CELLS
Vol. 89, Is. 02-Mar, 129-137, 2005

Growth mechanism, microstructure, EPMA and Raman studies of pulsed laser deposited Nd1-xBaxO7-delta thin films
Palai, R; Romans, EJ; Docherty, FT; Pegrum, CM
PHYSICA C-SUPERCONDUCTIVITY AND ITS APPLICATIONS
Vol. 424, Is. 01-Feb, 57-71, 2005

Photoluminescence studies of Eu-implanted GaN epilayers
Katchkanov, V; O'Donnell, KP; Dalmasso, S; Braud, A; Nakanishi, Y; Wakahara, A; Yoshida, A
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS
Vol. 242, Is. 7, 1491-1496, 2005

Angular dispersion of photons and phonons in a photonic crystal of selectively grown GaN pyramids containing an InxGa1-xN quantum well structure
Coquillat, D; Torres, J; d'Yerville, MLV; Legros, R; Lascaray, JP; Liu, C; Watson, IM; Chong, HMH; De La Rue, RM
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE
Vol. 202, Is. 4, 652-655, 2005

Luminescence properties of isolated InGaN/GaN quantum dots
Edwards, PR; Taylor, RA; Rice, JH; Na, JH; Robinson, JW; Smith, JD; Liu, C; Watson, IM
PHYSICA STATUS SOLIDI A-APPLIED RESEARCH

Imaging of cathodoluminescence zoning in calcite by scanning electron microscopy and hyperspectral mapping
Lee, MR; Trager-Cowan, C; Edwards, PR
Studies of growth, microstructure, IMP Raman spectroscopy and annealing effect of pulsed laser deposited Ca-doped NBCO thin films
Palai, R; Romans, EJ; Docherty, FT; Maas, P; Pegrum, CM
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 1, 51-61, 2005

Two-photon absorption in single site-controlled InGaN/GaN quantum dots
Jarjour, AF; Parker, TJ; Taylor RA; Watson IM
PHYSICA STATUS SOLIDI C
Vol. 2, 3843 – 3846 2005

Martin, V
University of Edinburgh

Measurement of the K-L -> e(+)+e(-)+e(+)- decay rate
Lai, A; Marras, D; Bevan, A; Dosanjh, RS; Gershon, TJ; Hay, B; Kalmus, GE; Lazzeroni, C; et al.
PHYSICS LETTERS B

Search for CP violation in K-0 -> 3 pi(0) decays
Batley, JR; Dosanjh, RS; Gershon, TJ; Kalmus, GE; Lazzeroni, C; Munday, DJ; et al.
PHYSICS LETTERS B

Measurement of the radiative K-e3 branching ratio
NA48 Collaboration
PHYSICS LETTERS B

And CDF Collaboration

Mathieson, K
University of Glasgow

Recent advancements in the development of radiation hard semiconductor detectors for S-LHC
Fretwurst, E; Adey, J; Al-Ajili, A; Alfieri, G; Allport, PP; Artuso, M; Assouak, S; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 552, Is. 1/2/2006, 7-19, 2005

Development of radiation tolerant semiconductor detectors for the Super-LHC
Moll, M; Adey, J; Al-Ajili, A; Alfieri, G; Allport, PP; Artuso, M; Assouak, S; et al.
30 μm spacing 519-electrode arrays for in vitro retinal studies
Gunning, D; Adams, C; Cunningham, W; O'Shea, V; Smith, KM; Chichilnisky, EJ; Litke, AM; Rahman, M

Development of flexible arrays for in vivo neuronal recording and stimulation
Adams, C; Gunning, D; Cunningham, W; Rahman, M; Morrison, JD; Prydderch, ML

Radiation-hard semiconductor detectors for SuperLHC
Bruzzi, M; Adey, J; Al-Ajili, A; Alexandrov, P; Alfieri, G; Allport, PP; et al.

McComb, WD
University of Edinburgh

Eulerian spectral closures for isotropic turbulence using a time-ordered fluctuation-dissipation relation
Kiyani, K
PHYSICAL REVIEW E
Vol. 72, Is. 1, Part 2, 16309, 2005

Galilean invariance and vertex renormalization in turbulence theory
PHYSICAL REVIEW E
Vol. 71, Is. 3, Part 2, 37301, 2005

Current Research
My work continues on fundamental issues in the application of renormalization methods to the statistical theory of turbulence. Recent advances include a new non-Gaussian perturbation theory for implementing renormalization group in a strong coupling regime using a model of extended asymptotic freedom. Recently I have begun working on the role of turbulence in the evolution of the cosmic magnetic field.
**McGeorge, JC**  
University of Glasgow

*Measurement of the G asymmetry for the gamma p -> N pi channels in the Delta(1232) resonance region*  
Ahrens, J; Altieri, S; Annand, JRM; Arends, HJ; Beck, R; Braghieri, A; d'Hose, N; et al.  
EUROPEAN PHYSICAL JOURNAL A  
Vol. 26, Is. 1, 135-140, 2005

*Near-threshold measurement of the He-4(gamma,n) reaction*  
Nilsson, B; Adler, JO; Andersson, BE; Annand, JRM; Akkurt, I; Boland, MJ; et al.  
PHYSICS LETTERS B  
Vol. 626, 65-71, 2005

*The selection and performance of diamond radiators used in coherent bremsstrahlung experiments*  
Kellie, JD; Clive, PJM; Yang, GL; Beck, R; Evans, BC; Gordon, C; Hall, C; et al.  
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT  
Vol. 545, 164-180, 2005

*Measurement of the pi(+) meson polarizabilities via the gamma P ->gamma pi(+)n reaction*  
Ahrens, J; Alexeev, VM; Annand, JRM; Arends, HJ; Beck, R; Caselotti, G; et al.  
EUROPEAN PHYSICAL JOURNAL A  
Vol. 23, Is. 1, 113-127, 2005

And **GDH Collaboration, A2 Collaboration**

Current Research  
I study the properties of nuclei, nucleons and mesons through photonuclear reactions mostly using the Glasgow Photon Tagging Spectrometer at Mainz and with the tagged photon facility at Lund. My main responsibility at present is the upgrade of the Glasgow spectrometer so that it can exploit the 1.5 GeV beam soon to be available from the Mainz accelerator.

**McGill, NC**  
University of St Andrews

Current Research  
apparent shape; D-minus state; excited state; hydrogen like; magnetooptics; rotating disc; semiconductor impurity; thin film; thin wire
Sample text
in intense laser-matter interactions are studied. Activities in laser-based fusion energy science.

**McMahon, MI**
University of Edinburgh

*Observation of a wurtzite form of gallium arsenide*
Nelmes, RJ
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 21, 215505, 2005

*Structures from powders and poor-quality single crystals at high pressure*
JOURNAL OF SYNCHROTRON RADIATION
Vol. 12, Part 5, 549-553, 2005

*Structure of the intermediate phase of PbTe at high pressure*
Rousse, G; Klotz, S; Saitta, AM; Rodriguez-Carvajal, J; Couzinet, B; Mezouar, M
PHYSICAL REVIEW B
Vol. 71, Is. 22, 224116, 2005

*X-ray diffraction study of liquid Cs up to 9.8 GPa*
Falconi, S; Lundegaard, LF; Hejny, C
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 12, 125507, 2005

*Incommensurate sulfur above 100 GPa*
Hejny, C; Lundegaard, LF; Falconi, S; Hanfland, M
PHYSICAL REVIEW B
Vol. 71, Is. 2, 20101, 2005

**McVitie, S**
University of Glasgow

*Focused ion beam irradiation of ferromagnetic thin films in the presence of an applied field*
McGrouther, D; Nicholson, WAP; Chapman, JN
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 18, 3348-3353, 2005

*Structural analysis of ion irradiated polycrystalline NiFe/FeMn exchange bias systems*
Blomeier, S; McGrouther, D; Chapman, JN; Weber, MC; Hillebrands, B; Fassbender, J
EUROPEAN PHYSICAL JOURNAL B
Vol. 45, Is. 2, 213-218, 2005

*Modification of the magnetic properties of exchange coupled NiFe/FeMn films by Ga+ ion irradiation*
Blomeier, S; McGrouther, D; O'Neill, R; Chapman, JN; Weber, MC; Hillebrands, B; Fassbender, J
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS
Current Research

Main area of interest is characterisation of continuous and patterned magnetic thin film systems using transmission electron microscopy (TEM). In particular the magnetic properties of nanoscale structures and thin films modified by focused ion beam irradiation have been studied. Extraction of quantitative information on the magnetic structure of thin films by Lorentz TEM imaging.

Meiksin, AA
University of Edinburgh

Detection of the baryon acoustic peak in the large-scale correlation function of SDSS luminous red galaxies
Eisenstein, DJ; Zehavi, I; Hogg, DW; Scocciararro R; Blanton MR; Nichol RC; et al.
ASTROPHYSICAL JOURNAL
Vol. 633, Is. 2, Part 1, 560-574, 2005

The luminosity and color dependence of the galaxy correlation function
Zehavi, I; Zheng, Z; Weinberg, DH; Frieman, JA; Berlind, AA; Blanton, MR; et al.
ASTROPHYSICAL JOURNAL
Vol. 630, Is. 1, Part 1, 1-27, 2005

The 2dF-SDSS LRG and QSO (2SLAQ) survey: the z < 2.1 quasar luminosity function from 5645 quasars to g=21.85
Richards, GT; Croom, SM; Anderson, SF; Bland-Hawthorn, J; Boyle, BJ; et al.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 360, Is. 3, 839-852, 2005

An empirical calibration of the completeness of the SDSS quasar survey
Vanden Berk, DE; Schneider, DP; Richards, GT; Hall, PB; Strauss, MA; et al.
ASTRONOMICAL JOURNAL
Vol. 129, Is. 5, 2047-2061, 2005

The third data release of the Sloan digital Sky Survey
Abazajian, K; Adelman-McCarthy, JK; Agueros, MA; Allam, SS; Anderson, KSJ; et al.
ASTRONOMICAL JOURNAL
Vol. 129, Is. 3, 1755-1759, 2005

The intermediate-scale clustering of luminous red galaxies
Zehavi, I; Eisenstein, DJ; Nichol, RC; Blanton, MR; Hogg, DW; Brinkmann, J; Loveday, J; Schneider, DP; Tegmark, M
ASTROPHYSICAL JOURNAL
Vol. 621, Is. 1, Part 1, 22-31, 2005

Constraints on the ionization sources of the high-redshift intergalactic medium
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, Is. 2, 596-606, 2005
The small-scale clustering of luminous red galaxies via cross-correlation techniques
Eisenstein, DJ; Blanton M; Zehavi, I; Bahcall, N; Brinkmann, J; Loveday, J; Meiksin, A; Schneider, D
ASTROPHYSICAL JOURNAL
Vol. 619, Is. 1, Part 1, 178-192, 2005

Current Research
Structure formation in the early universe, including numerical cosmological simulations of the growth of baryonic structures in the intergalactic medium, its reionisation, and pollution by metals, and as a tool to constrain cosmological models. The history of galaxy formation as investigated through population synthesis models. The cosmic 21cm signature as a means of detecting the end of the ‘dark ages.’

Miller, A
University of St Andrews

Wavelet transforms for optical pulse analysis
Vazquez, JM; Mazilu, M; Galbraith, I
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA A-OPTICS IMAGE SCIENCE AND VISION
Vol. 22, Is. 12, 2890-2899, 2005

Spatial dependence of gain nonlinearities in InGaAs semiconductor optical amplifier
Gomez-Iglesias, A; Fenn, JG; Mazilu, M
APPLIED PHYSICS LETTERS
Vol. 87, Is. 12, 121108, 2005

Current Research
Optical communications; datacomms; optical nonlinearities; semiconductor optoelectronics; low dimensional systems; ultrashort pulse lasers; ultrafast phenomena; smart dust; speckled computing

Miller, D
University of Glasgow

Measurement of the gluino mass via cascade decays for SPS 1a
Gjelsten, BK; Osland, P
JOURNAL OF HIGH ENERGY PHYSICS
Is. 6, 15, 2005

The Neutralino Sector of the Next-to-Minimal Supersymmetric Standard Model
S. Y. Choi, D. J. Miller, P. M. Zerwas
NUCLEAR PHYSICS B
Vol. 711, 83, 2005
Current Research
I investigate the collider phenomenology of models beyond the Standard Model, in particular extended Higgs sectors and supersymmetry. Recent topics have included: the verification of the Higgs boson's spin and CP quantum numbers; the measurement of supersymmetric masses in cascade decays at the LHC; the phenomenology of the Next-to-Minimal Supersymmetric Standard Model; and fine tuning in new physics models.

Monthoux, P
University of Edinburgh

*Magnetic interactions in a single-band model for the cuprates and ruthenates*
Lonzarich, GG
PHYSICAL REVIEW B
Vol. 71, Is. 5, 54504, 2005

Muheim, F
University of Edinburgh

*Search for the W-exchange decays B-0 -> Ds(*)-Ds(*)+*
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 11, 111101, 2005

*Studies of MaPMTs with beetle-chip read-out*
Muheim, F
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 553, Is. 38749, 351-355, 2005

*Study of the tau(-)-> 3h(-)2h(+)nu(tau) decay*
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; Tisserand, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 7, 72001, 2005

*Measurements of branching fractions and dality distributions for B-0 ->(DK0)-K-(*)+/ -pi(-)/ +) decays*
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 17, 171802, 2005

*Dalitz plot analysis of D-0 ->(K)over-bar(0)K(+)K(-)*
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 5, 52008, 2005
Determination of vertical bar V-ub vertical bar from measurements of the electron and neutrino momenta in inclusive semileptonic B decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 11, 111801, 2005

Search for b -> u transitions in B- -> (D(K)-K-0) and B- -> (D(K)-K-*0
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 3, 32004, 2005

Measurement of the total width, the electronic width, and the mass of the Upsilon(10580) resonance
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Gaillard, JM; Hicheur, A; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 3, 32005, 2005

Search for the rare decays B+ -> (D(*)+KS0)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 1, 11102, 2005

Search for lepton flavor violation in the decay tau(+/-)->mu(+/-)gamma
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 41802, 2005

Search for the rare leptonic decay B--->tau(-)nu(tau)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Gaillard, JM; Hicheur, A; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 41804, 2005

Improved measurement of the Cabibbo-Kobayashi-Maskawa angle alpha using B-0(B)->rho(+)rho(-) decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 41805, 2005

Measurement of the branching fraction of Upsilon(4S)->(BB0)-B-0
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 42001, 2005

Search for strange-pentaquark production in e(+)+e(-) annihilation at root s=10.58 GeV
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 42002, 2005

Evidence for the decay B-+/- --> K.*+-/pi(0)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Measurement of the branching fraction and the CP-violating asymmetry for the decay B-0 -> K-S(0)pi(0)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 111102, 2005

Measurement of time-dependent CP-violating asymmetries and constraints on sin(2 beta+gamma) with partial reconstruction of B -> D.*+-/-pi(+-/-) decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 112003, 2005

Branching fraction and CP asymmetries of B-0 -> (KSKS0)-K-0-K-0
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 1, 11801, 2005

Performance of multi-anode photomultiplier tubes for the LHCb RICH detectors
Bibby, J; Buckley, A; Chamonal, R; Easo, S; Eisenhardt, S; Gibson, V; Harnew, N; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 38749, 93-98, 2005

Search for the decay B+ -> K+ v(overline-v) over-bar
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Gaillard, JM; Hicheur, A; Karyotakis, Y; Lees, JP; Tisserand, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 10, 101801, 2005

And BaBar Collaboration

Murphy, A
University of Edinburgh

The DRIFT-II dark matter detector: Design and commissioning
Alner, GJ; Araujo, H; Bewick, A; Burgos, S; Carson, MJ; Davies, JC; Daw, E; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 555, Is. 01-Feb, 173-183, 2005

The Be-7(d,p)2 alpha cross section at big bang energies and the primordial Li-7 abundance
Angulo, C; Casarejos, E; Couder, M; Demaret, P; Leleux, P; Vanderbist, F; Coc, A; et al.
ASTROPHYSICAL JOURNAL
Multichannel R-matrix analysis of elastic and inelastic resonances in the Na-20,Na-21+p compound systems
Ruiz, C; Aliotta, M; Azuma, RE; Boyd, RN; Buchmann, I; Chen, A; Clarke, NM; et al.
NUCLEAR PHYSICS A
Vol. 758, 166C-169C, 2005

Study of Be-7+d reactions for standard big bang nucleosynthesis
Angulo, C; Casarejos, E; Coc, A; Davinson, T; Achouri, N; Cortina-Gil, D; et al.
NUCLEAR PHYSICS A
Vol. 758, 775C-778C, 2005

Status of the ZEPLIN II experiment
Alner, GJ; Atac, M; Bewick, A; Bungau, C; Camanzi, B; Carson, MJ; Ghag, C; et al.
NEW ASTRONOMY REVIEWS
Vol. 49, Is. 02-Jun, 259-263, 2005

Multichannel R-matrix analysis of elastic and inelastic resonances in the Na-21+p compound system
Ruiz, C; Davinson, T; Sarazin, F; Roberts, I; Robinson, A; Woods, PJ; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 2, 25802, 2005

Limits on WIMP cross-sections from the NAIAD experiment at the boulby underground laboratory
UK Dark Matter Collaboration
PHYSICS LETTERS B

Nelmes, RJ
University of Edinburgh

Toroidal anvils for single-crystal neutron studies
Bull, CL; Guthrie, M; Klotz, S; Philippe, J; Strassle, T; Loveday, JS; Hamel, G
HIGH PRESSURE RESEARCH
Vol. 25, Is. 4, 229-233, 2005

Observation of a wurtzite form of gallium arsenide
McMahon, MI
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 21, 215505, 2005

In situ neutron diffraction studies of high density amorphous ice under pressure
Klotz, S; Strassle, T; Saitta, AM; Rousse, G; Hamel, G; Loveday, JS; Guthrie, M
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 11, S967-S974, 2005

Nature of the polyamorphic transition in ice under pressure
Klotz, S; Strassle, T; Loveday, JS; Hamel, G; Rousse, G; Canny, B; Chervin, JC; Saitta, AM
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 2, 25506, 2005
Current Research
Current research focuses on complex high-pressure phases in elemental metals, transitions in amorphous ice in relation to models of water, crystalline ice and other simple molecular systems at high pressure, and the development of novel single-crystal techniques at high pressure on both neutron and synchrotron sources. Interests in more powerful neutron sources are also being pursued.

O'Donnell, KP
University of Strathclyde, Department of Physics

*Selectively excited photoluminescence from Eu-implanted GaN*
Wang, K; Martin, RW; Katchkanov, V; Nogales, E; Lorenz, K; Alves, E; Ruffenach, S; Briot, O
APPLIED PHYSICS LETTERS
Vol. 87, Is. 11, 112107, 2005

*Raman-scattering study of the InGaN alloy over the whole composition range*
Hernandez, S; Cusco, R; Pastor, D; Artus, I; Martin, RW; Watson, IM; Nanishi, Y; Calleja, E
JOURNAL OF APPLIED PHYSICS
Vol. 98, Is. 1, 13511, 2005

*Photoluminescence studies of Eu-implanted GaN epilayers*
Katchkanov, V; Dalmasso, S; Martin, RW; Braud, A; Nakanishi, Y; Wakahara, A; Yoshida, A
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS
Vol. 242, Is. 7, 1491-1496, 2005

Ogwu, AA
University of Paisley

*An investigation of the surface energy and optical transmittance of copper oxide thin films prepared by reactive magnetron sputtering*
Bouquerel, E; Ademosu, O; Moh, S; Crossan, E; Placido, F
ACTA MATERIALIA
Vol. 53, Is. 19, 5151-5159, 2005

*An extended Derjaguin-Landau-Verwey-Overbeek theory approach to determining the surface energy of copper oxide thin films prepared by reactive magnetron sputtering*
Bouquerel, E; Ademosu, O; Moh, S; Crossan, E; Placido, F
METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE
Vol. 36A, Is. 9, 2435-2439, 2005

Mechanical stability, corrosion performance and bioresponse of amorphous diamond-like carbon for medical stents and guidewires
Maguire, PD; McLaughlin, JA; Okpalugo, TIT; Lemoine, P; Papakonstantinou, P; McAdams, ET; Needham, M; Ball, M; Abbas, GA
DIAMOND AND RELATED MATERIALS
Vol. 14, Is. 8, 1277-1288, 2005

The influence of rf power and oxygen flow rate during deposition on the optical transmittance of copper oxide thin films prepared by reactive magnetron sputtering
Bouquerel, E; Ademosu, O; Moh, S; Crossan, E; Placido, F
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 2, 266-271, 2005

Current Research
My current research activities lie at the intersection between materials science, condensed matter physics, biological physics and plasma chemistry. We probe the dependence of structure, mechanical, electrical and optical properties of thin films prepared by plasma synthesis on their electronic and surface properties. This forms the basis of my research into the development of advanced materials for the 21st century

Oppo, G
University of Strathclyde, Department of Physics

Spontaneous and induced motion of optical patterns
Scroggie, AJ; Gomila, D; Firth, WJ;
APPLIED PHYSICS B-LASERS AND OPTICS
Vol. 81, Is. 7, 963-968, 2005

Spatial response of cavity systems
Scroggie, AJ; Jeffers, J; McCartney, G;
PHYSICAL REVIEW A
Vol. 72, Is. 2, 23824, 2005

Coupled-mode theory for photonic band-gap inhibition of spatial instabilities
Gomila, D
PHYSICAL REVIEW E
Vol. 72, Is. 1, Part 2, 16614, 2005

Reversible soliton motion
Scroggie, AJ; Jeffers, J; McCartney, G
PHYSICAL REVIEW E
Vol. 71, Is. 4, Part 2, 46602, 2005
O’Shea, V
University of Glasgow

*Three-dimensional Medipix - A new generation of X-ray detectors*
Wright, VA; Davidson, WD; Melone, JJ; Smith, KM; Donohue, L; Lea, L; Robb, K;
Nenonen, S; Sipila, H
IEEE TRANSACTIONS ON NUCLEAR SCIENCE
Vol. 52, Is. 5, Part 3, 1873-1876, 2005

*Image quality of Medipix2 assemblies with silicon detectors of two different thicknesses*
Quarati, F; Smith, KM
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 01-Feb, 42-45, 2005

*GaNUV detectors for synchrotron-based protein structure studies*
Blue, A; Grant, J; Cunningham, W; Quarati, F; Smith, KM; Rahman, M; Manolopoulos, S
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 01-Feb, 131-134, 2005

*State of the art on epitaxial GaAs detectors*
Sun, GC; Manez, N; Zazoui, M; Al-Ajili, A; Davidson, DW; Quarati, F; Smith, KM;
Chambellan, D; Gal, O; Pillot, P; Lenoir, M; Montagne, JP; Bechtnia, A; Bourgoin, JC
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 01-Feb, 140-147, 2005

*30 μm spacing 519-electrode arrays for in vitro retinal studies*
Gunning, D; Adams, C; Cunningham, W; Mathieson, K; Smith, KM; Chichilnisky, EJ;
Litke, AM; Rahman, M
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 01-Feb, 148-153, 2005

*Wide bandgap semiconductor detectors for harsh radiation environments*
Grant, J; Cunningham, W; Blue, A; Vaitkus, J; Gaubas, E; Rahman, M
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 01-Feb, 213-217, 2005

*3-D Medipix: A new generation of X-ray detectors*
Wright, VA; Davidson, WD; Melone, J; Smith, KM; Donohue, L; Lea, L; Robb, K;
Nenonen, S; Sipila, H
Improved measurement of the triple gauge-boson couplings $\gamma WW$ and $ZWW$ in $e^+e^-$ collisions
Schael, S; Barate, R; Bruneliere, R; De Bonis, I; Decamp, D; Goy, C; Jezequel, S; et al.
PHYSICS LETTERS B
Vol. 614, Is. 01-Feb, 7-26, 2005

Beam tests of ATLAS SCT silicon strip detector modules
Campabadal, F; Fleta, C; Key, M; Lozano, M; Martinez, C; Pellegrini, G; Rafi, JM; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION
A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 538, Is. 01-Mar, 384-407, 2005

And ALEPH Collaboration

Padgett, M
University of Glasgow

Observation of Gouy-phase-induced transversal intensity changes in focused beams
Steuernagel, O; Yao, E; O'Holleran, K;
JOURNAL OF MODERN OPTICS
Vol. 52, Is. 18, 2713-2721, 2005

Effects of changes to the stable environment on the exhalation of ethane, carbon monoxide and hydrogen peroxide by horses with respiratory inflammation
Wyse, CA; Skeldon, K; Hotchkiss, JW; Gibson, G; Yam, PS; Christley, RM; Preston, T; Cumming, DRS; Cooper, JC; Love, S
VETERINARY RECORD
Vol. 157, Is. 14, 408-412, 2005

Creating permanent 3D arrangements of isolated cells using holographic optical tweezers
Jordan, P; Leach, J; Blackburn, P; Isaacs, N; Goksor, M; Hanstorp, D; Wright, A; Girkin, J; Cooper, J
LAB ON A CHIP
Vol. 5, Is. 11, 1224-1228, 2005

Effect of maximal dynamic exercise on exhaled ethane and carbon monoxide levels in human, equine, and canine athletes
Wyse, C; Cathcart, A; Sutherland, R; Ward, S; McMillan, I; Gibson, G; Skeldon, K
COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY A-MOLECULAR & INTEGRATIVE PHYSIOLOGY
Vol. 141, Is. 2, 239-246, 2005

An open-path, hand-held laser system for the detection of methane gas
van Well, B; Murray, S; Hodgkinson, J; Pride, R; Strzoda, R; Gibson, G;
3D interferometric optical tweezers using a single spatial light modulator
Schonbrun, E; Piestun, R; Jordan, P; Cooper, J; Wulff, KD; Courtial, J;
OPTICS EXPRESS
Vol. 13, Is. 10, 3777-3786, 2005

Momentum paradox in a vortex core
Zambrini, R; Thomson, LC; Barnett, SM;
JOURNAL OF MODERN OPTICS
Vol. 52, Is. 8, 1135-1144, 2005

Minimum uncertainty states of angular momentum and angular position
Pegg, DT; Barnett, SM; Zambrini, R; Franke-Arnold, S;
NEW JOURNAL OF PHYSICS
Vol. 7, 62, 2005

Red microchip VECSEL array
Hastie, JE; Morton, LG; Calvez, S; Dawson, MD; Leinonen, T; Pessa, M; Gibson, G; Padgett, MJ
OPTICS EXPRESS
Vol. 13, Is. 18, 7209-7214, 2005

Development of high-resolution real-time sub-ppb ethane spectroscopy and some pilot studies in life science
Skeldon, KD; Gibson, GM; Wyse, CA; McMillan, LC; Monk, SD; Longbottom, C
APPLIED OPTICS
Vol. 44, Is. 22, 4712-4721, 2005

The potential offered by real-time, high-sensitivity monitoring of ethane in breath and some pilot studies using optical spectroscopy
Skeldon, KD; Patterson, C; Wyse, CA; Gibson, GM; Padgett, MJ; Longbottom, C; McMillan, LC
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, S376-S384, 2005

Surface-enhanced resonance Raman scattering in optical tweezers using co-axial second harmonic generation
Jordan, P; Cooper, J; McNay, G; Docherty, FT; Graham, D; Smith, WE; Sinclair, G; Padgett, MJ
OPTICS EXPRESS
Vol. 13, Is. 11, 4148-4153, 2005

Vortex knots in light
Leach, J; Dennis, MR; Courtial, J; Padgett, MJ
NEW JOURNAL OF PHYSICS
Vol. 7, 55, 2005

H2S fluxes from Mt. Etna, Stromboli, and Vulcano (Italy) and implications for the sulfur budget at volcanoes
Current Research
Padgett has an international reputation for contributions to the fundamental understanding of light's momentum, including conversion of optical tweezers into optical spanners, a rotational form of the Doppler shift and a new form of Heisenberg’s uncertainty principle. His applied work has led to several commercial products and services, including; a UV pollution monitor and a new technique for oil prospecting.

Papoff, F
University of Strathclyde, Department of Physics

Convective instability induced by nonlocality in nonlinear diffusive systems
Zambrini, R
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 24, 243903, 2005

Parkes, CJ
University of Glasgow

Production of \( \Xi(0)(c) \) and \( \Xi(b) \) in \( Z \) decays and lifetime measurement of \( \Xi(b) \)
DELPHI Collaboration
EUROPEAN PHYSICAL JOURNAL C
Vol. 44, Is. 3, 299-309, 2005

Charged particle multiplicity in three-jet events and two-gluon systems
DELPHI Collaboration
EUROPEAN PHYSICAL JOURNAL C
Vol. 44, Is. 3, 311-331, 2005

Recent advancements in the development of radiation hard semiconductor detectors for S-LHC
Fretwurst, E; Adey, J; Al-Ajili, A; Alfieri, G; Allport, PP; Artuso, M; Assouak, S; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 552, Is. 01-Feb, 7-19, 2005

Developing radiation hard silicon for the LHCb vertex locator
Flavour independent searches for hadronically decaying neutral Higgs bosons
DELPHI Collaboration
EUROPEAN PHYSICAL JOURNAL C
Vol. 44, Is. 2, 147-159, 2005

Bose-Einstein correlations in $W^+W^-$ events at LEP2
DELPHI Collaboration
EUROPEAN PHYSICAL JOURNAL C
Vol. 44, Is. 2, 161-174, 2005

Determination of $A(FB)(b)$ at the Z pole using inclusive charge reconstruction and lifetime tagging
DELPHI Collaboration
EUROPEAN PHYSICAL JOURNAL C
Vol. 40, Is. 1, 1-25, 2005

Development of radiation tolerant semiconductor detectors for the Super-LHC
Moll, M; Adey, J; Al-Ajili, A; Alfieri, G; Allport, PP; Artuso, M; Assouak, S; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 01-Feb, 99-107, 2005

Radiation-hard semiconductor detectors for SuperLHC
Bruzzi, M; Adey, J; Al-Ajili, A; Alexandrov, P; Alfieri, G; Allport, PP; Andreazza, A; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 541, Is. 01-Feb, 189-201, 2005

Coherent soft particle production in Z decays into three jets
Abdallah, J; Abreu, P; Adam, W; Adzic, P; Albrecht, T; Alderweireld, T; et al.
PHYSICS LETTERS B
Vol. 605, Is. 01-Feb, 37-48, 2005

Photon events with missing energy in $e^+(e^-)$ collisions at root $s=130$ to 209 GeV
DELPHI Collaboration
EUROPEAN PHYSICAL JOURNAL C
Vol. 38, Is. 4, 395-411, 2005

Measurement of the energy dependence of hadronic jet rates and the strong coupling alpha(s) from the four-jet rate with the DELPHI detector at LEP
DELPHI Collaboration
EUROPEAN PHYSICAL JOURNAL C
Vol. 38, Is. 4, 413-426, 2005
Current Research
Dr Parkes and his group are currently contributing to the development of the vertex locator of the LHCb experiment, which will be the foremost international facility for matter-anti-matter asymmetry studies when data taking starts in 2007. Dr Parkes has primary responsibility for the publication on the W Mass, the major measurement from five years of data taking by the 500+ physicist DELPHI particle physics experiment.

Peacock, J
University of Edinburgh

The 2dF Galaxy Redshift Survey: correlation with the ROSAT-ESO flux-limited X-ray galaxy cluster survey
Hilton, M; Collins, C; De Propris, R; Baldry, IK; Baugh, CM; et al.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 363, Is. 2, 661-674, 2005

Where are the stars?
Eke, VR; Baugh, CM; Cole, S; Frenk, CS; King, HM; Peacock, JA; Colless, M; Zibetti, S; White, SDM
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 362, Is. 4, 1233-1246, 2005

Simulations of the formation, evolution and clustering of galaxies and quasars
Springel, V; White, SDM; Jenkins, A; Frenk, CS; Yoshida, N; Gao, L; Navarro, J; Thacker, R; Croton, D; Helly, J; Peacock, JA; Cole, S; Thomas, P; Couchman, H; Evrard, A; Colberg, J; Pearce, F
NATURE
Vol. 435, Is. 7042, 629-636, 2005

Black holes, cooling flows and galaxy formation
PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES
Vol. 363, Is. 1828, 751-759, 2005

The SCUBA Half Degree Extragalactic Survey (SHADES) – I. Survey, motivation, design and data processing
Mortier, AMJ et al.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 363, 563, 2005

And 2dFGRS Team
Current Research
John Peacock is a cosmologist, with interests in both theory and observation, covering in particular: the theory of galaxy formation and clustering; the distribution of distant quasars & active galaxies; the statistics of gravitational lensing; the stellar properties and environments of active galaxies.

Pegrum, CM
University of Strathclyde, Department of Physics

Growth mechanism, microstructure, EPMA and Raman studies of pulsed laser deposited Nd1-xBa2+xCu3O7-delta thin films
Palai, R; Romans, EJ; Martin, RW; Docherty, FT;
PHYSICA C-SUPERCONDUCTIVITY AND ITS APPLICATIONS
Vol. 424, Is. 01-Feb, 57-71, 2005

Single sensor high-temperature superconducting axial gradiometer with thick film pick-up loops
Haining, S; Romans, EJ; Donaldson, GB; Hao, L; Macfarlane, JC
IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY
Vol. 15, Is. 2, Part 1, 769-772, 2005

Studies of growth, microstructure, IMP Raman spectroscopy and annealing effect of pulsed laser deposited Ca-doped NBCO thin films
Palai, R; Romans, EJ; Martin, RW; Docherty, FT; Maas, P
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 1, 51-61, 2005

Current Research
Low-temperature SQUIDs and other non-Josephson devices for sub-kelvin single-photon detection; development of accurate inductance extraction methods for complex 3-dimensional thin-film superconducting components; micron-scale thin-film electromagnets to manipulate magnetic nano-particles for biological and chemical analysis.

Pendleton, B
University of Edinburgh

Penedo-Esteiro, JC
University of St Andrews

Two competitive routes in the lactim-lactam phototautomerization of a hydroxypyridine derivative cation in water: Dissociative mechanism versus water-assisted proton transfer
Penedo, JC; Rodriguez, MCR; Lema, IG; Lustres, JLP; Mosquera, M; Rodriguez-Prieto, F
JOURNAL OF PHYSICAL CHEMISTRY A
Vol. 109, 10189-10198, 2005
Photophysical study of a family of [Ru(phen)(2)(Me(n)dpq)(2+)] complexes in different solvents and DNA: a specific water effect promoted by methyl substitution
O’Donoghue, K; Penedo, JC; Kelly, JM; Kruger, PE
DALTON TRANSACTIONS
Is. 6, 1123-1128, 2005

Current Research
Our research is currently focused on the application of single-molecule techniques to study bimolecular systems, in particular (i) the development of the next generation of FRET methods for the quantitative study of protein interactions linked to Alzheimer and related diseases, (ii) the mechanism of DNA repair by endonucleases and (iii) the development of a novel framework to study co-transcriptional RNA folding in real time.

Phelps, ADR
University of Strathclyde, Department of Physics

A laboratory experiment to investigate auroral kilometric radiation emission mechanisms
Speirs, DC; Vorgul, I; Ronald, K; Bingham, R; Cairns, RA; Kellett, BJ; Cross, AW; Whyte, CG; Robertson, C
JOURNAL OF PLASMA PHYSICS
Vol. 71, Part 5, 665-674, 2005

Observation of photonic band-gap control in one-dimensional Bragg structures
Konoplev, IV; McGrane, P; Cross, AW; Ronald, K
APPLIED PHYSICS LETTERS
Vol. 87, Is. 12, 121104, 2005

Peculiarities of mode spectrum in two-dimensional Bragg structures
Ginzburg, NS; Peskov, NY; Sergeev, AS; Cross, AW
OPTICS COMMUNICATIONS
Vol. 250, Is. 04-Jun, 309-315, 2005

Gyro-BWO experiments using a helical interaction waveguide
He, WL; Ronald, K; Young, AR; Cross, AW; Whyte, CG; Rafferty, EG; Thomson, J; Robertson, CW; Speirs, DC; Samsonov, SV; Bratman, VL; Denisov, GG
IEEE TRANSACTIONS ON ELECTRON DEVICES
Vol. 52, Is. 5, 839-844, 2005

Wave interference and band gap control in multiconductor one-dimensional Bragg structures
Konoplev, IV; McGrane, P; Cross, AW; Ronald, K
JOURNAL OF APPLIED PHYSICS
Vol. 97, Is. 7, 73101, 2005

Microwave pulse compression using a helically corrugated waveguide
Burt, G; Samsonov, SV; Bratman, VL; Ronald, K; Denisov, GG; He, WL; Young, AR; Cross, AW; Konoplev, IV
IEEE TRANSACTIONS ON PLASMA SCIENCE
Pickard, CJ
University of St Andrews

*The role of the interlayer state in the electronic structure of superconducting graphite intercalated compounds*
Csanyi, G; Littlewood, PB; Nevidomskyy, AH; Simons, BD
NATURE PHYSICS
Vol. 1, Is. 1, 42-45, 2005

*Ultrasoft spin-dependent pseudopotentials*
Cocula, V; Carter, EA
JOURNAL OF CHEMICAL PHYSICS
Vol. 123, Is. 21, 214101, 2005

*Structural studies of the polymorphs of carbamazepine, its dihydrate, and two solvates*
Harris, RK; Ghi, PY; Puschmann, H; Apperley, DC; Griesser, UJ; Hammond, RB; Ma, CY; Roberts, KJ; Pearce, GJ; Yates, JR
ORGANIC PROCESS RESEARCH & DEVELOPMENT
Vol. 9, Is. 6, 902-910, 2005

*Combined first-principles computational and experimental multinuclear solid-state NMR investigation of amino acids*
Gervais, C; Dupree, R; Pike, KJ; Bonhomme, C; Profeta, M; Mauri, F
JOURNAL OF PHYSICAL CHEMISTRY A
Vol. 109, Is. 31, 6960-6969, 2005

*An investigation of weak CH...O hydrogen bonds in maltose anomers by a combination of calculation and experimental solid-state NMR spectroscopy*
Yates, JR; Pham, TN; Mauri, F; Amado, AM; Gil, AM; Brown, SP
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY
Vol. 127, Is. 29, 10216-10220, 2005

*First principles methods using CASTEP*
Clark, SJ; Segall, MD; Hasnip, PJ; Probert, MJ; Refson, K; Payne, MC
ZEITSCHRIFT FUR KRISTALLOGRAPHIE
Vol. 220, Is. 38873, 567-570, 2005

*Gauge invariance of the spin-other-orbit contribution to the g-tensors of electron paramagnetic resonance*
Patchkovskii, S; Strong, RT; Un, S
JOURNAL OF CHEMICAL PHYSICS
Vol. 122, Is. 21, 214101, 2005

*First-principles calculation of O-17 and Mg-25 NMR shieldings in MgO at finite temperature: Rovibrational effect in solids*
Rossano, S; Mauri, F; Farnan, I
JOURNAL OF PHYSICAL CHEMISTRY B
Vol. 109, Is. 15, 7245-7250, 2005
First-principles calculation of the O-17 NMR parameters of a calcium aluminosilicate glass
Benoit, M; Profeta, M; Mauri, F; Tuckerman, ME
JOURNAL OF PHYSICAL CHEMISTRY B
Vol. 109, Is. 13, 6052-6060, 2005

Theoretical investigation of moganite
Hantsch, U; Winkler, W; Gale, JD; Warren, MC; Milman, V; Mauri, F
EUROPEAN JOURNAL OF MINERALOGY
Vol. 17, Is. 1, 21-30, 2005

A combined first principles computational and solid-state NMR study of a molecular crystal: flurbiprofen
Yates, JR; Dobbins, SE; Mauri, F; Ghi, PY; Harris, RK
PHYSICAL CHEMISTRY CHEMICAL PHYSICS
Vol. 7, Is. 7, 1402-1407, 2005

Pidgeon, C
Heriot-Watt University

Pump-probe measurement of lifetime engineering in SiGe quantum wells below the optical phonon energy
Phillips, PJ; Carder, D; Murdin, BN; Fromherz, T; Paul, DJ; Ni, WX; Zhao, M
SEMICONDUCTOR SCIENCE AND TECHNOLOGY
Vol. 20, Is. 10, L50-L52, 2005

Temperature and doping dependence of spin relaxation in n-InAs
Murdin, BN; Litvinenko, K; Allam, J; Bird, M; Morrison, K; Zhang, T; Clowes, SK; Branford, WR; Harris, J; Cohen, LF
PHYSICAL REVIEW B
Vol. 72, Is. 8, 85346, 2005

Intersubband lifetimes in p-Si/ SiGe terahertz quantum cascade heterostructures
Kelsall, RW; Ikonic, Z; Murzyn, P; Phillips, PJ; Carder, D; Harrison, P; Lynch, SA; Townsend, P; Paul, DJ; Liew, SL; Norris, DJ; Cullis, AG
PHYSICAL REVIEW B
Vol. 71, Is. 11, 115326, 2005

Excitonic signatures in the photoluminesence and terahertz absorption of a GaAs/AlxGa1-xAs multiple quantum well
Galbraith, I; Chari, R; Pellegrini, S; Phillips, PJ; Dent, CJ; van der Meer, AFG; et al.
PHYSICAL REVIEW B
Vol. 71, Is. 7, 73302, 2005

Current Research
The intersubband transition rate in SiGe quantum cascade structures will be engineered and measured to achieve optimum material gain. An attempt will be made to realize an optically pumped Si/SiGe quantum fountain laser. Spin relaxation and spin injection will
be measured in narrow gap semiconductor quantum well structures with a view to developing a narrow gap spintronic transisiter device.

**Placido, F**  
University of Paisley

*An investigation of the surface energy and optical transmittance of copper oxide thin films prepared by reactive magnetron sputtering*  
Ogwu, AA; Bouquerel, E; Ademosu, O; Moh, S; Crossan, E;  
*ACTA MATERIALIA*  
Vol. 53, Is. 19, 5151-5159, 2005

*Onmidirectional mirror coating design for infrared applications*  
Lusk, D;  
*THIN SOLID FILMS*  
Vol. 492, Is. 01-Feb, 226-231, 2005

*An extended Derjaguin-Landau-Verwey-Overbeek theory approach to determining the surface energy of copper oxide thin films prepared by reactive magnetron sputtering*  
Ogwu, AA; Bouquerel, E; Ademosu, O; Moh, S; Crossan, E;  
*METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE*  
Vol. 36A, Is. 9, 2435-2439, 2005

*Impedance analysis of MnCoCuONTc ceramic*  
Song, SG; Ling, Z;  
*MATERIALS RESEARCH BULLETIN*  
Vol. 40, Is. 7, 1081-1093, 2005

*The influence of rf power and oxygen flow rate during deposition on the optical transmittance of copper oxide thin films prepared by reactive magnetron sputtering*  
Ogwu, AA; Bouquerel, E; Ademosu, O; Moh, S; Crossan, E;  
*JOURNAL OF PHYSICS D-APPLIED PHYSICS*  
Vol. 38, Is. 2, 266-271, 2005

Current Research  
I am interested in all aspects of thin film deposition, characterisation and applications. Current funded projects (EPSRC and DTI) with industry involve coatings for flexible electronics (backplanes and displays). In addition we have research programs in realtime broadband monitoring of thin film deposition (SCORE), and thin-film batteries.
Playfer, SM
University of Edinburgh

*Search for the W-exchange decays B-0 -> Ds(*)-Ds(*)+
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 11, 111101, 2005

*Study of the tau(-)-> 3h(-)2h(+)nu(tau) decay
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 7, 72001, 2005

*Measurements of branching fractions and dalitz distributions for B-0 ->(DK0)-K-(*)+-pi(-/) decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 17, 171802, 2005

*Dalitz plot analysis of D-0 ->(K)over-bar(0)K(+)K(-)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 5, 52008, 2005

*Determination of vertical bar V-ub vertical bar from measurements of the electron and neutrino momenta in inclusive semileptonic B decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 11, 111801, 2005

*Search for b -> u transitions in B- -> (DK-)-K-0 and B- -> (DK)-K-*0
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 3, 32004, 2005

*Measurement of the total width, the electronic width, and the mass of the Upsilon(10580) resonance
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Gaillard, JM; Hicheur, A; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 3, 32005, 2005

*Search for the rare decays B+->(D(*)+KS0)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 72, Is. 1, 11102, 2005

*Search for lepton flavor violation in the decay tau(+/-)->mu(+/-)gamma
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 41802, 2005

*Search for the rare leptonic decay B--->tau(-)nu(tau)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Gaillard, JM; Hicheur, A; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 41804, 2005

Improved measurement of the Cabibbo-Kobayashi-Maskawa angle alpha using B-0(B)->rho(+)rho(-) decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 41805, 2005

Measurement of the branching fraction of Upsilon(4S)->(BB0)-B-0 decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 42001, 2005

Search for strange-pentaquark production in e(+)e(-) annihilation at root s=10.58 GeV
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 4, 42002, 2005

Evidence for the decay B+ -> K*+ -> pi(0)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 111101, 2005

Measurement of the branching fraction and the CP-violating asymmetry for the decay B-0 -> K- S(0)pi(0)
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 111102, 2005

Measurement of time-dependent CP-violating asymmetries and constraints on sin(2 beta+gamma) with partial reconstruction of B -> D.*+ -> pi(+/-) decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 112003, 2005

Branching fraction and CP asymmetries of B-0 ->(KSKS0)-K-0-K-0 decays
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Karyotakis, Y; Lees, JP; Poireau, V; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 1, 11801, 2005

Search for the decay B+ --> K+ v(v)over-bar
Aubert, B; Barate, R; Boutigny, D; Couderc, F; Gaillard, JM; Hicheur, A; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 10, 101801, 2005

And BaBar Collaboration
Plissi, MV
University of Glasgow

*The status of GEO 600*
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; Barr, BW; Berukoff, S; Bunkowski, A; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, S193-S198, 2005

And **LIGO Scientific** Collaboration, **TAMA** Collaboration

Poon, W
University of Edinburgh

**Solid-like domains in fluid membranes**
Beales, PA; Gordon, VD; Zhao, ZJ; Egelhaaf, SU
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 45, S3341-S3346, 2005

**Colloid-stabilized emulsions: behaviour as the interfacial tension is reduced**
Clegg, PS; Herzig, EM; Schofield, AB; Horozov, TS; Binks, BP; Cates, ME
JOURNAL OF PHYSICS-CONDENSED MATTER
Vol. 17, Is. 45, S3433-S3438, 2005

**DNA bending by M.EcoKI methyltransferase is coupled to nucleotide flipping**
Su, TJ; Tock, MR; Egelhaaf, SU; Dryden, DTF
NUCLEIC ACIDS RESEARCH
Vol. 33, Is. 10, 3235-3244, 2005

**Formation of self-supporting reversible cellular networks in suspensions of colloids and liquid crystals**
Vollmer, D; Hinze, G; Ullrich, B; Cates, ME; Schofield, AB
LANGMUIR
Vol. 21, Is. 11, 4921-4930, 2005

**Non-equilibrium behavior of sticky colloidal particles: beads, clusters and gels**
Sedgwick, H; Kroy, K; Salonen, A; Robertson, MB; Egelhaaf, SU
EUROPEAN PHYSICAL JOURNAL E
Vol. 16, Is. 1, 77-80, 2005

Prior, K
Heriot-Watt University

**N-type doping of zinc selenide using a silver iodide thermal effusion source**
Morrod, JK; Graham, TCM; Cavenett, BC
JOURNAL OF CRYSTAL GROWTH
Vol. 278, Is. 01-Apr, 278-281, 2005
Epitaxial lift-off of MBE grown II-VI heterostructures using a novel MgS release layer
Bradford, C; Curran, A; Balocchi, A; Cavenett, BC; Warburton, RJ
JOURNAL OF CRYSTAL GROWTH
Vol. 278, Is. 01-Apr, 325-328, 2005

Increasing the spectral separation between the emission lines from individual CdSe quantum dots through annealing
Graham, TCM; Tang, X; Cavenett, BC; Warburton, RJ
JOURNAL OF CRYSTAL GROWTH
Vol. 278, Is. 01-Apr, 743-746, 2005

Metastable group II sulphides grown by MBE: surface morphology and crystal structure
Bradford, C; David, L; Tang, X; Cavenett, BC
JOURNAL OF CRYSTAL GROWTH
Vol. 275, Is. 01-Feb, 141-149, 2005

Quasi-ballistic transport of excitons in quantum wells
Kalt, H; Zhao, H; Dal Don, B; Schwartz, G; Bradford, C
JOURNAL OF LUMINESCENCE
Vol. 112, Is. 01-Apr, 136-141, 2005

Epitaxial liftoff of ZnSe-based heterostructures using a II-VI release layer
Balocchi, A; Curran, A; Graham, TCM; Bradford, C; Warburton, RJ
APPLIED PHYSICS LETTERS
Vol. 86, Is. 1, 11915, 2005

Current Research
My research interests are based around the growth of II-VI semiconductor thin films and their structural and electrical properties. In particular, my group produces quantum wells and quantum dots of ZnSe or CdSe by MBE. I have also developed a variety of metastable materials, such as MgS and metastable magnetic materials such as MnS and CrS, which are not available elsewhere.

Pusey, P
University of Edinburgh

Stability of the binary colloidal crystals AB(2) and AB(13)
Schofield, AB; Radcliffe, P
PHYSICAL REVIEW E
Vol. 72, Is. 3, Part 1, 31407, 2005
Read, MA
University of Edinburgh

Second data release of the 6dF Galaxy Survey
Jones, DH; Saunders, W; Colless, M
PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF AUSTRALIA
Vol. 22, Is. 3, 277-286, 2005

The AAO/UKST SuperCOSMOS H alpha survey
Parker, QA; Phillipps, S; Pierce, MJ; Hartley, M; Hambly, NC; MacGillivray, HT; Tritton, SB;
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 362, Is. 2, 689-710, 2005

The HIPASS catalogue - III. Optical counterparts and isolated dark galaxies
Doyle, MT; Drinkwater, MJ; Rohde, DJ; Pimbblet, KA; Meyer, MJ; Zwaan, MA; Ryan-Weber, E;
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 361, Is. 1, 34-44, 2005

Reid, D
Heriot-Watt University

Active waveguide fabrication in erbium-doped oxyfluoride silicate glass using femtosecond pulses
Thomson, RR; Campbell, S; Blewett, IJ; Kar, AK; Shen, S; Jha, A
APPLIED PHYSICS LETTERS
Vol. 87, Is. 12, 121102, 2005

Adaptive beam profile control using a simulated annealing algorithm
El-Agmy, R; Bulte, H; Greenaway, AH
OPTICS EXPRESS
Vol. 13, Is. 16, 6085-6091, 2005

Mid-infrared absorption spectroscopy of methane using a broadband femtosecond optical parametric
oscillator based on aperiodically poled lithium niobate
Tillman, KA; Maier, RRJ; McNaghten, ED
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, S408-S414, 2005

Fibre interferometer for multi-wavelength interferometry with a femtosecond laser
Towers, CE; MacPherson, WN; Maier, RRJ; Towers, DP
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, S415-S419, 0, 2005

General second-harmonic pulse shaping in grating-engineered quasi-phase-matched nonlinear crystals
Sapaev, UK;
OPTICS EXPRESS
Vol. 13, Is. 9, 3264-3276, 2005
Current Research
The availability of high-power tunable femtosecond lasers has enabled their use in new engineering and industrial applications. Derryck Reid's research spans the development of practical ultrafast lasers and measurement techniques to their applications in industrial imaging, sensing and material processing. Examples include two-photon imaging of fluid mixing and of silicon integrated circuits, and femtosecond machining of optical waveguides and semiconductors.

**Riis, E**
University of Strathclyde, Department of Physics

Current Research
Two main areas of research:
1. Laser cooling of atoms and BEC: We are looking at a BEC in a toroidal geometry with the aim of studying matter wave interferometry. New setup being constructed for laser cooling of calcium to BEC.
2. Novel light sources: Particular current interest is single frequency operation of optically pumped semiconductor lasers.

**Robb, GRM**
University of Strathclyde, Department of Physics

*Propagation effects in the quantum description of collective recoil lasing*
Bonifacio, R; Piovella, N; Cola, MM
OPTICS COMMUNICATIONS
Vol. 252, Is. 04-Jun, 381-396, 2005

*The semiclassical and quantum regimes of super-radiant light scattering from a Bose-Einstein condensate*
Piovella, N; Bonifaci, R
JOURNAL OF OPTICS B-QUANTUM AND SEMICLASSICAL OPTICS
Vol. 7, Is. 4, 93-98, 2005

*Four-wave mixing with self-phase matching due to collective atomic recoil*
McNeil, BWJ
PHYSICAL REVIEW LETTERS
A quantum model for collective recoil lasing
Bonifacio, R; Cola, MM; Piovella, N
EUROPHYSICS LETTERS
Vol. 69, Is. 1, 55-60, 2005

Quantum theory of SASE FEL
Bonifacio, R; Piovella, N; Robb GRM
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 543, Is. 2-3, 645-652, 2005

Current Research
Dr Robb's research interests are collective interactions between light and particles (e.g. atoms, electrons, ions). Collective light-atom interactions involve many atoms which cooperate and self-organize, leading to the emergence of long range order in the atomic distribution, and coherent scattering of light. Current research involves theoretical studies of cold atoms and BEC in cavities, and short-wavelength generation in free-electron lasers.

Robertson, DI
University of Glasgow

The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; Barr, BW; Berukoff, S; Bunkowski, A; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, S193-S198, 2005

And LIGO Scientific Collaboration

Robertson, N
University of Glasgow

The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; Barr, BW; Berukoff, S; Bunkowski, A; Cagnoli, G; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, S193-S198, 2005

And LIGO Scientific Collaboration
Current Research
Norna Robertson's research is centred on experimental work towards the detection of gravitational waves, in particular on the development of ultra-low noise multiple pendulum suspension systems for Advanced LIGO, the proposed upgrade to LIGO. She holds the position of cognizant scientist for suspensions in Advanced LIGO. She is also involved in investigating electrostatic surface effects for the space-based LISA project.

**Rolinski, OJ**
University of Strathclyde, Department of Physics

*Glucose-dependent changes in NAD(P)H-related fluorescence lifetime of adipocytes and fibroblasts in vitro: Potential for non-invasive glucose sensing in diabetes mellitus*
Evans, ND; Gnudi, L; Birch, DJS; Pickup, JC
JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY B-BIOLOGY
Vol. 80, Is. 2, 122-129, 2005

*Fluorescence-based glucose sensors*
Pickup JC, Hussain F, Evans ND, Birch DJS
BIOSENSORS AND BIOELECTRONICS
Vol. 20, Is. 12, 2555-2565, 2005

*Fluorescence Nanotomography: recent progress, constraints and opportunites*
Birch DJS

Current Research
Time-resolved fluorescence spectroscopy in nanometrology and sensing with applications in biomedical and analytical sciences. He uses resonance energy transfer in his fluorescence nanotomography approach for determining molecular separations on the nm scale. Other research include fluorescence-based single molecule detection by confocal microscopy and SNOM, and medical sensing by means of intrinsic fluorescence of biomolecules.

**Romans, EJ**
University of Strathclyde, Department of Physics

*Growth mechanism, microstructure, EPMA and Raman studies of pulsed laser deposited Nd1-xBa2+xCu3O7-delta thin films*
Palai, R; Martin, RW; Docherty, FT; Pegrum, CM
PHYSICA C-SUPERCONDUCTIVITY AND ITS APPLICATIONS
Vol. 424, Is. 01-Feb, 57-71, 2005

*Single sensor high-temperature superconducting axial gradiometer with thick film pick-up loops*
Haining, S; Pegrum, CM; Donaldson, GB; Hao, L; Macfarlane, JC
Studies of growth, microstructure, IMP Raman spectroscopy and annealing effect of pulsed laser deposited Ca-doped NBCO thin films
Palai, R; Martin, RW; Docherty, FT; Maas, P; Pegrum, CM
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 1, 51-61, 2005

Ronald, K
University of Strathclyde, Department of Physics

A laboratory experiment to investigate auroral kilometric radiation emission mechanisms
Speirs, DC; Vorgul, I; Bingham, R; Cairns, RA; Phelps, ADR; Kellett, BJ; Cross, AW; Whyte, CG; Robertson, C
JOURNAL OF PLASMA PHYSICS
Vol. 71, Part 5, 665-674, 2005

Observation of photonic band-gap control in one-dimensional Bragg structures
Konoplev, IV; McGrane, P; Phelps, ADR; Cross, AW
APPLIED PHYSICS LETTERS
Vol. 87, Is. 12, 121104, 2005

Gyro-BWO experiments using a helical interaction waveguide
He, WL; Young, AR; Cross, AW; Phelps, ADR; Whyte, CG; Rafferty, EG; Thomson, J; Robertson, CW; et al.
IEEE TRANSACTIONS ON ELECTRON DEVICES
Vol. 52, Is. 5, 839-844, 2005

Wave interference and band gap control in multiconductor one-dimensional Bragg structures
Konoplev, IV; McGrane, P; Cross, AW; Phelps, ADR
JOURNAL OF APPLIED PHYSICS
Vol. 97, Is. 7, 73101, 2005

Microwave pulse compression using a helically corrugated waveguide
Burt, G; Samsonov, SV; Phelps, ADR; Bratman, VI; Denisov, GG; He, WL; Young, AR; Cross, AW; Konoplev, IV
IEEE TRANSACTIONS ON PLASMA SCIENCE
Vol. 33, Is. 2, Part 2, 661-667, 2005

Rosner, G
University of Glasgow

Measurement of the G asymmetry for the gamma \( p \rightarrow N \pi \) channels in the Delta(1232) resonance region
Ahrens, J; Altieri, S; Annand, JRM; Arends, HJ; Beck, R; Braghieri, A; d'Hose, N; et al.
EUROPEAN PHYSICAL JOURNAL A
Measurement of the tensor structure function $b(1)$ of the deuteron
Airapetian, A; Akopov, N; Akopov, Z; Amarian, M; Ammosov, VV; Andrus, A; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 24, 242001, 2005

Beam-helicity asymmetries in double-charged-pion photoproduction on the proton
Strauch, S; Berman, BL; Adams, G; Ambrozewicz, P; Anghinolfi, M; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 16, 162003, 2005

Exclusive photoproduction of the cascade (Xi) hyperons
Price, JW; Nefkens, BMK; Ducote, JL; Goetz, JT; Adams, G; Ambrozewicz, P; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 5, 58201, 2005

Measurement of the electric form factor of the neutron at $Q^2=0.3$-$0.8$ $(\text{GeV}/c)^2$
Glazier, DI; Seimetz, M; Annand, JRM; Arenhovel, H; Antelo, MA; Ayerbe, C; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 24, Is. 1, 101-109, 2005

The HERMES polarized hydrogen and deuterium gas target in the HERA electron storage ring
Airapetian, A; Akopov, N; Akopov, Z; Amarian, M; Andrus, A; Aschenauer, EC; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 540, Is. 1, 68-101, 2005

Exclusive rho(0) meson electroproduction from hydrogen at CLAS
Hadjidakis, C; Guidal, M; Garcon, M; Laget, JM; Smith, ES; Vanderhaeghen, M; et al.
PHYSICS LETTERS B
Vol. 605, Is. 38810, 256-264, 2005

And CLAS Collaboration, GDH Collaboration, HERMES Collaboration, A2 Collaboration

Rowan, S
University of Glasgow

Thermal noise and material issues for gravitational wave detectors
Hough, J; Crooks, DRM
PHYSICS LETTERS A
Vol. 347, Is. 01-Mar, 25-32, 2005

Laser interferometry for the detection of gravitational waves
Hough, J;
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, 2005
The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

Hydroxide-catalysis bonding for stable optical systems for space
Elliffe, EJ; Bogenstahl, J; Deshpande, A; Hough, J; Killow, C; Reid, S; Robertson, D; Ward, H; Cagnoli, G
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10,

The search for gravitational waves
Hough, J;
PHYSICS WORLD
Vol. 18, Is. 1, 37-41, 2005

The search for gravitational waves
Hough, J; Rowan, S; Sathyaprakash, BS
JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS
Vol. 38, Is. 9, S497-S519, 2005

Hydroxide-catalysis bonding for stable optical systems for space
Elliffe, EJ; Bogenstahl, J; Deshpande, A; Hough, J; Killow, C; Reid, S; Robertson, D; Rowan, S; Ward, H; Cagnoli, G
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 1/10/1900, S257-S267, 2005

And LIGO Scientific Collaboration, TAMA Collaboration

Current Research
Gravitational Wave Detection (GEO 600, Advanced LIGO and 3rd generation detectors); ultra sensitive mechanical systems, materials of ultra-low mechanical loss, stable platforms for space-based interferometry.

PI on: SRDG project for materials characterisation; on a PIPSS grants to develop techniques for glass integral field units and Co-I on grants relating to research towards the GEO600, Advanced LIGO and LISA Pathfinder experiments.

Ruddock, IS
University of Strathclyde, Department of Physics

Birefringent and nonlinear optical assessment of single crystal lithium niobate fibres
Renwick, EK
JOURNAL OF PHYSICS D-APPLIED PHYSICS
Vol. 38, Is. 18, 3387-3390, 2005

126
Current Research
His research has concentrated on laser physics, ultrashort pulses (including the
development of effectively the world’s first femtosecond laser), nonlinear optics and
crystal fibres. His current research is in optical fibre sensing, and with Dr Thomas Han
(Physics, Strathclyde), he is the co-inventor of a new class of distributed sensor exploiting
nonlinear excitation of fluorescence using time-correlated light pulses.

Samuel, IDW
University of St Andrews

Effect of gain localization in circular-grating distributed feedback lasers
Turnbull, GA; Carleton, A; Tahraouhi, A; Krauss, TF; Barlow, GF; Shore, KA
APPLIED PHYSICS LETTERS
Vol. 87, Is. 20, 201101, 2005

Light out-coupling efficiencies of organic light-emitting diode structures and the effect of photoluminescence quantum yield
Smith, LH; Wasey, JAE; Barnes, WL
ADVANCED FUNCTIONAL MATERIALS
Vol. 15, Is. 11, 1839-1844, 2005

Ultrafast depolarization of the fluorescence in a conjugated polymer
Ruseckas, A; Wood, P; Webster, GR; Mitchell, WJ; Burn, PL; Sundstrom, V
PHYSICAL REVIEW B
Vol. 72, Is. 11, 115214, 2005

A light-blue phosphorescent dendrimer for efficient solution-processed light-emitting diodes
Lo, SC; Richards, GJ; Markham, JPJ; Namdas, EB; Sharma, S; Burn, PL;
ADVANCED FUNCTIONAL MATERIALS
Vol. 15, Is. 9, 1451-1458, 2005

Discrete hopping model of exciton transport in disordered media
Burlakov, VM; Kawata, K; Assender, HE; Briggs, GAD; Ruseckas, A;
PHYSICAL REVIEW B
Vol. 72, Is. 7, 75206, 2005

Encapsulated cores: Host-free organic light-emitting diodes based on solution-processible electrophosphorescent dendrimers
Lo, SC; Anthopoulos, TD; Namdas, EB; Burn, PL;
ADVANCED MATERIALS
Vol. 17, Is. 16, 1945, 2005

Influence of grating characteristics on the operation of circular-grating distributed-feedback polymer lasers
Turnbull, GA; Carleton, A; Barlow, GF; Tahraouhi, A; Krauss, TF; Shore, KA;
JOURNAL OF APPLIED PHYSICS
Vol. 98, Is. 2, 23105, 2005

Description of exciton transport in a TiO2/MEH-PPV heterojunction photovoltaic material
Kawata, K; Burlakov, VM; Carey, MJ; Assender, HE; Briggs, GAD; Ruseckas, A;
Low threshold edge emitting polymer distributed feedback laser based on a square lattice
Vasdekis, AE; Turnbull, GA; Andrew, P; Barnes, WL
APPLIED PHYSICS LETTERS
Vol. 86, Is. 16, 161102, 2005

Simple color tuning of phosphorescent dendrimer light emitting diodes
Namdas, EB; Anthopoulos, TD; Frampton, MJ; Lo, SC; Burn, PL
APPLIED PHYSICS LETTERS
Vol. 86, Is. 16, 161104, 2005

Triplet exciton diffusion in fac-tris(2-phenylpyridine) iridium(III)-cored electroluminescent dendrimers
Namdas, EB; Ruseckas, A; Lo, SC; Burn, PL
APPLIED PHYSICS LETTERS
Vol. 86, Is. 9, 91104, 2005

Saxon, DH
University of Glasgow

Study of deep inelastic inclusive and diffractive scattering with the ZEUS forward plug calorimeter
Chekanov, S; Derrick, M; Magill, S; Miglioranzi, S; Musgrave, B; Repond, J; et al.
NUCLEAR PHYSICS B
Vol. 713, Is. 01-Mar, 3-80, 2005

Beam tests of ATLAS SCT silicon strip detector modules
Campabadal, F; Fleta, C; Key, M; Lozano, M; Martinez, C; Pellegrini, G; Rafi, JM; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 538, Is. 01-Mar, 384-407, 2005

And ZEUS Collaboration

Shotter, A
University of Edinburgh

Multichannel R-matrix analysis of elastic and inelastic resonances in the Na-20,Na-21+p compound systems
Ruiz, C; Aliotta, M; Azuma, RE; Boyd, RN; Buchmann, I; Chen, A; Clarke, NM; et al.
NUCLEAR PHYSICS A
Vol. 758, 166C-169C, 2005

Sequential decay reactions induced by a 18 MeV He-6 beam on Li-6 and Li-7
Milin, M; Zadro, M; Cherubini, S; Davinson, T; Di Pietro, A; Figuera, P; et al.
NUCLEAR PHYSICS A
Multichannel R-matrix analysis of elastic and inelastic resonances in the Na-21+p compound system
Ruiz, C; Davinson, T; Sarazin, F; Roberts, I; Robinson, A; Woods, PJ; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 2, 25802, 2005

Sibbett, W
University of St Andrews

Yb3+-doped YVO4 crystal for efficient Kerr-lens mode locking in solid-state lasers
Lagatsky, AA; Sarmani, AR; Brown, CTA; Kisel, VE; Selivanov, AG; Denisov, IA; et al.
OPTICS LETTERS
Vol. 30, Is. 23, 3234-3236, 2005

Single-scan spectroscopy of mercury at 253.7 nm by sum frequency mixing of violet and red microlensed diode lasers
Carruthers, AE; Lake, TK; Shah, A; Allen, JW; Dholakia, K
OPTICS COMMUNICATIONS
Vol. 255, Is. 04-Jun, 261-266, 2005

Low-loss GaInNAs saturable Bragg reflector for mode-locking of a femtosecond Cr4+: Forsterite-laser
McWilliam, A; Lagatsky, AA; Lebum, CG; Fischer, P; Brown, CTA; Valentine, GJ; Kemp, AJ; Calvez, S; Burns, D; Dawson, MD; Pessa, M
IEEE PHOTONICS TECHNOLOGY LETTERS
Vol. 17, Is. 11, 2292-2294, 2005

Output radiation focusing in curved-grating distributed Bragg reflector laser
Sokolovskii, GS; Dudelev, VV; Gadzhiev, IM; Losev, SN; Deryagin, AG; Kuchinskii, VI; Rafailov, EU;
TECHNICAL PHYSICS LETTERS
Vol. 31, Is. 10, 824-826, 2005

Light-induced cell separation in a tailored optical landscape
Paterson, L; Papagiakoumou, E; Milne, G; Garces-Chavez, V; Tatarkova, SA; Gunn-Moore, FJ; Bryant, PE; Riches, AC; Dholakia, K
APPLIED PHYSICS LETTERS
Vol. 87, Is. 12, 123901, 2005

White light propagation invariant beams
Fischer, P; Brown, CTA; Morris, JE; Lopez-Mariscal, C; Wright, EM; Dholakia, K
OPTICS EXPRESS
Vol. 13, Is. 17, 6657-6666, 2005

High-power picosecond and femtosecond pulse generation from a two-section mode-locked quantum-dot laser
Rafailov, EU; Cataluna, MA; Il'inskaya, ND; Zadiranov, YM; Zhukov, AE; Ustinov, VM; Livshits, DA; Kovsh, AR; Ledentsov, NN
APPLIED PHYSICS LETTERS
Vol. 87, Is. 8, 81107, 2005

Broad tunability from a compact, low-threshold Cr : LiSAF laser incorporating an improved birefringent filter and multiple-cavity Gires-Tournois interferometer mirrors
Stormont, B; Kemp, AJ; Cormack, IG; Agate, B; Brown, CTA;
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS
Vol. 22, Is. 6, 1236-1243, 2005

Efficient femtosecond green-light source with a diode-pumped mode-locked Yb3+ : KY(WO4)2 laser
Lagatsky, AA; Rafailov, EU; Sarmani, AR; Brown, CTA; Ming, L; Smith, PGR
OPTICS LETTERS
Vol. 30, Is. 10, 1144-1146, 2005

36-Tb/s spectral slicing source based on a Cr4+-YAG femtosecond laser
Chai, YJ; Leburn, CG; Lagatsky, AA; Brown, CTA; Penty, RV; White, IH;
JOURNAL OF LIGHTWAVE TECHNOLOGY
Vol. 23, Is. 3, 1319-1324, 2005

Photoporation and cell transfection using a violet diode laser
Paterson, L; Agate, B; Comrie, M; Ferguson, R; Lake, TK; Morris, JE; Carruthers, AE;
Brown, CTA; Bryant, PE; Gunn-Moore, F; Riches, AC; Dholakia, K
OPTICS EXPRESS
Vol. 13, Is. 2, 595-600, 2005

Quantum-dot-based saturable absorber with p-n junction for mode-locking of solid-state lasers
Lagatsky, AA; Rafailov, EU; Livshits, DA; Zhukov, AE; Ustinov, VM
IEEE PHOTONICS TECHNOLOGY LETTERS
Vol. 17, Is. 2, 294-296, 2005

Current Research
My research interests are centred mainly in the development, assessment and applications of ultrashort-pulse lasers and associated ultrafast diagnostics. A key breakthrough in this area was our development of self (or Kerr-lens) modelocked femtosecond solid-state lasers for which the titanium sapphire system was the archetype. I have used these and other femtosecond lasers in areas such as optoelectronics, nonlinear and waveguide optics and time-resolved spectroscopy for a range of studies in physics. I am the Director of a major interdisciplinary research collaboration (Ultrafast Photonics Collaboration) where the primary objective is to develop femtosecond datacomms networks that might ultimately offer data transfer speeds up 100Tb/s. More recently, other research interests has encompassed applications in biophotonics and medical photonics where a range of novel laser configurations are being designed for specific light-matter interactions.
Sinclair, BD  
University of St Andrews

Compact and efficient single-frequency Nd : YVO₄ laser with variable longitudinal-mode discrimination  
Lake, TK; Kemp, AJ; Friel, GJ  
IEEE PHOTONICS TECHNOLOGY LETTERS  
Vol. 17, Is. 2, 417-419, 2005

Singhal, RP  
University of Glasgow

Broad energy spectrum of laser-accelerated protons for spallation-related physics  
McKenna, P; Ledingham, KWD; Shimizu, S; Yang, JM; Robson, L; McCanny, T; et al.  
PHYSICAL REVIEW LETTERS  
Vol. 94, Is. 8, 84801, 2005

Skeldon, KD  
University of Glasgow

Effects of changes to the stable environment on the exhalation of ethane, carbon monoxide and hydrogen peroxide by horses with respiratory inflammation  
Wyse, CA; Hotchkiss, JW; Gibson, G; Yam, PS; Christley, RM; Preston, T; Cumming, DRS; Padgett, M; Cooper, JC; Love, S  
VETERINARY RECORD  
Vol. 157, Is. 14, 408-412, 2005

Effect of maximal dynamic exercise on exhaled ethane and carbon monoxide levels in human, equine, and canine athletes  
Wyse, C; Cathcart, A; Sutherland, R; Ward, S; McMillan, L; Gibson, G; Padgett, M  
COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY A-MOLECULAR & INTEGRATIVE PHYSIOLOGY  
Vol. 141, Is. 2, 239-246, 2005

Development of high-resolution real-time sub-ppb ethane spectroscopy and some pilot studies in life science  
Gibson, GM; Wyse, CA; McMillan, LC; Monk, SD; Longbottom, C; Padgett, MJ  
APPLIED OPTICS  
Vol. 44, Is. 22, 4712-4721, 2005

The potential offered by real-time, high-sensitivity monitoring of ethane in breath and some pilot studies using optical spectroscopy  
Patterson, C; Wyse, CA; Gibson, GM; Padgett, MJ; Longbottom, C; McMillan, LC  
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS  
Vol. 7, Is. 6, S376-S384, 2005
Smith, GM  
University of St Andrews

Appearance of copper d(9) defect centres in wide-gap CdSe nanoparticles: A high-frequency EPR study
Poolton, NRJ; Riedi, PC; Allen, JW; Firth, AV; Cole-Hamilton, DJ; McInnes, EJL
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS
Vol. 242, Is. 4, 829-835, 2005

Kinetic study of UV-irradiated amorphous sulfur by EPR spectroscopy
El Mkami, H
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS
Vol. 229, Is. 03-Apr, 392-396, 2005

Snowdon, J  
Heriot-Watt University

Soler, P  
University of Glasgow

Performance of multi-anode photomultiplier tubes for the LHCb RICH detectors
Bibby, J; Buckley, A; Chamonal, R; Easo, S; Eisenhardt, S; Gibson, V; Harnew, N; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 546, Is. 2/1/2006, 93-98, 2005

Current Research
I mainly work on the LHCb experiment, where I am involved in the design of the RICH detectors, testing the hybrid photon detectors (HPD) to be used in the RICH and a measurement of the unitarity angle gamma. I also work on R&D leading towards a neutrino factory, working on the MICE experiment and defining the requirements of a near detector at a neutrino factory.

Spohr, K  
University of Paisley

Spectroscopy of Ne and Na isotopes: Preliminary results from a EUROBALL plus binary reaction spectrometer experiment
Keyes, KL; Papenberg, A; Chapman, R; Ollier, J; Liang, X; Burns, MJ; Labiche, M; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 25, 431-432, 2005

Nucleon transfer via (d,p) using TLARA with a Ne-24 radioactive beam
Catford, WN; Timis, CN; Lemmon, RC; Labiche, M; Orr, NA; Caballero, I; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1655-S1661, 2005

Study of transfer reactions in inverse kinematics with the TIARA array
Labiche, M; Timis, CN; Lemmon, RC; Catford, WN; Chapman, R; Amzal, N; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1691-S1695, 2005

High spin studies of the Er and Tm isotopes around A=166
Burns, MJ; Chapman, R; Ollier, J; Labiche, M; Liang, X; Farnea, E; Axiotis, M; Martinez, T; Napoli, DR; Ur, CA; Kroll, T
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1827-S1830, 2005

Spectroscopy of Ne, Na and Mg isotopes approaching the Island of Inversion
Keyes, KL; Papenberg, A; Chapman, R; Ollier, J; Liang, X; Burns, MJ; Labiche, M; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1903-S1906, 2005

Intruder configurations in neutron-rich P and S isotopes
Ollier, J; Hodsdon, A; Chapman, R; Liang, X; Burns, M; Keyes, K; Labiche, M; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1935-S1938, 2005

Unnatural-parity states in Sc-44(21)23
Lach, M; Styczen, J; Meczynski, W; Bednarczyk, P; Bracco, A; Grebosz, J; Maj, A; Merdinger, JC; Schulz, N; Smith, MB; Zieblinski, M
EUROPEAN PHYSICAL JOURNAL A
Vol. 25, Is. 1, 1-4, 2005

Intruder configurations in neutron-rich P-34
Ollier, J; Chapman, R; Liang, X; Labiche, M; Davison, M; de Angelis, G; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 3, 34316, 2005

St Denis, R
University of Glasgow

Search for ZZ and ZW production in pp(-) collisions at root s=1.96 TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 9, 91105, 2005

Measurement of the lifetime difference between B-s mass eigenstates
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 10, 101803, 2005
First measurements of inclusive $W$ and $Z$ cross sections from Run II of the Fermilab Tevatron Collider
Acosta, D; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; Amerio, S; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 9, 91803, 2005

And CDF Collaboration

Steven-Setchell, J
University of Paisley

Strain, KA
University of Glasgow

Optimal time-domain combination of the two calibrated output quadratures of GEO 600
Hewitson, M; Grote, H; Hild, S; Luck, H; Ajith, P; Smith, JR; Willke, B; Woan, G
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 20, 4253-4261, 2005

Laser amplitude stabilization for advanced interferometric gravitational wave detectors
Barr, BW; Killow, CJ
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 20, 4279-4283, 2005

Results from the first burst hardware injections performed on GEO 600
Balasubramanian, R; Grote, H; Heng, IS; Hewitson, M; Luck, H; Smith, JR; Ward, H; Willke, B
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 14, 3015-3028, 2005

Feedforward correction of mirror misalignment fluctuations for the GEO 600 gravitational wave detector
Smith, JR; Grote, H; Hewitson, M; Hild, S; Luck, H; Parsons, M; Willke, B
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 14, 3093-3104, 2005

Signal based vetoes for the detection of gravitational waves from inspiralling compact binaries
Babak, S; Grote, H; Hewitson, M; Luck, H;
PHYSICAL REVIEW D
Vol. 72, Is. 2, 22002, 2005

The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

Optimal time-domain combination of the two calibrated output quadratures of GEO 600
Hewitson, M; Grote, H; Hild, S; Luck, H; Ajith, P; Smith, JR; Strain, KA; Willke, B; Woan, G
Current Research
My research focuses on the development and operation of interferometric gravitational wave detectors. I work on all areas within this field including optical design, control systems, data acquisition, detector characterisation and data analysis. I continue to provide key input to GEO600, an operating detector, and lead the UK contribution to Advanced LIGO - an instrument that will yield frequent observations.

Summers, HP
University of Strathclyde, Department of Physics

Evidence for explosive event activity originating in the chromosphere
Doyle, JG; Ishak, B; Ugarte-Urra, I; Bryans, P;
ASTRONOMY & ASTROPHYSICS
Vol. 439, Is. 3, 1183-1189, 2005

The effect of metastable level populations on the ionization fraction of Li-like ions
Doyle, JG; Bryans, P
ASTRONOMY & ASTROPHYSICS
Vol. 430, Is. 2, L29-L32, 2005

Taghizadeh, M
Heriot-Watt University

Free-space optical fibre ribbon switch for use in storage area networks
Zhang, F; Collings, N; Crossland, WA; Wilkinson, TD; Neo, PL; Waddie, A
IEE PROCEEDINGS-OPTOELECTRONICS
Vol. 152, Is. 6, 285-291, 2005

Erbium-doped waveguide fabrication via reactive pulsed laser deposition of erbium-doped oxyfluoride-silicate glass
Thomson, RR; Bokey, HT; Kar, AK; Klini, A; Fotakis, C; Romano, E; Caricato, AP; Martino, M; Shen, S; Jha, A
ELECTRONICS LETTERS
Vol. 41, Is. 25, 1376-1377, 2005

A novel algorithm for designing diffractive optical elements for two colour far-field pattern formation
Caley, AJ; Waddie, AJ;
JOURNAL OF OPTICS A-PURE AND APPLIED OPTICS
Vol. 7, Is. 6, S276-S279, 2005

Interconnection non-uniformity tolerance of an optoelectronic radial basis function network
Operation of an optoelectronic crossbar switch containing a terabit-per-second free-space optical interconnect
Walker, AC; Fancey, SJ; Desmulliez, MPY; Forbes, MG; Casswell, JJ; Buller, GS; et al.
IEEE JOURNAL OF QUANTUM ELECTRONICS
Vol. 41, Is. 7, 1024-1036, 2005

Comparison of one- and two-dimensional dielectric reflector geometries for high-energy laser pulse compression
Waddie, AJ; Thomson, MJ
OPTICS LETTERS
Vol. 30, Is. 9, 991-993, 2005

Design and fabrication of Fourier plane diffractive optical elements for high-power fibre-coupling applications
Thomson, MJ
OPTICS AND LASERS IN ENGINEERING
Vol. 43, Is. 6, 671-681, 2005

Coherent array of white-light continuum filaments produced by diffractive microlenses
Cook, K; McGeorge, R; Kar, AK; Lamb, RA
APPLIED PHYSICS LETTERS
Vol. 86, Is. 2, 21105, 2005

Taylor, A
University of Edinburgh

Weak lensing studies from space with GEMS
Heymans, C; Brown, ML; Barden, M; Caldwell, J; Haussler, B; Jahnke, K; Rix, HW; et al.
NEW ASTRONOMY REVIEWS
Vol. 49, Is. 07-Sep, 392-395, 2005

Evolution of the dark matter distribution with three-dimensional weak lensing
Bacon, DJ; Brown, ML; Gray, ME; Wolf, C; Meisenheimer, K; Dye, S; Wisotzki, L; Borch, A; Kleinheinrich, M
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 363, Is. 3, 723-733, 2005

Cosmic microwave background temperature and polarization pseudo-C-l estimators and covariances
Brown, ML; Castro, PG
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 360, Is. 4, 1262-1280, 2005
Thompson, AS
University of Glasgow

Search for anomalous kinematics in $t\bar{t}$ Dilepton events at CDF II
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 2, 22001, 2005

Measurement of the cross section for prompt diphoton production in $p\bar{p}$ collisions at $\sqrt{s}=1.96$ TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 2, 22003, 2005

Search for scalar leptoquark pairs decaying to $\nu\bar{\nu}q\bar{q}$ in $p\bar{p}$ collisions at $\sqrt{s}=1.96$ TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 112001, 2005

Study of jet shapes in inclusive jet production in $p\bar{p}$ collisions at $\sqrt{s}=1.96$ TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 11, 112002, 2005

Search for $ZZ$ and $ZW$ production in $pp(\bar{p})$ collisions at $\sqrt{s}=1.96$ TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 9, 91105, 2005

Measurements of bottom-antibottom azimuthal production correlations in proton-antiproton collisions at $\sqrt{s}=1.8$ TeV
Acosta, D; Affolder, T; Albrow, MG; Ambrose, D; Amidei, D; Anikeev, K; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 9, 92001, 2005

Improved measurement of the triple gauge-boson couplings $\gamma WW$ and $ZWW$ in $e^{+}e^{-}$ collisions
Schael, S; Barate, R; Bruneliere, R; De Bonis, I; Decamp, D; Goy, C; Jezequel, S; et al.
PHYSICS LETTERS B
Vol. 614, Is. 38749, 7-26, 2005

Search for excited and exotic electrons in the $e\gamma$ decay channel in $p\bar{p}$ collisions at $\sqrt{s}=1.96$ TeV
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 10, 101802, 2005

Measurement of the lifetime difference between $B_s$ mass eigenstates
Acosta, D; Adelman, J; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 10, 101803, 2005

137
First measurements of inclusive W and Z cross sections from Run II of the Fermilab Tevatron Collider
Acosta, D; Affolder, T; Akimoto, T; Albrow, MG; Ambrose, D; Amerio, S; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 9, 91803, 2005

Comparison of three-jet events in p(\bar{p}) collisions at root s=1.8 TeV to predictions from a next-to-leading order QCD calculation
Acosta, D; Affolder, T; Albrow, MG; Ambrose, D; Amidei, D; Anikeev, K; et al.
PHYSICAL REVIEW D
Vol. 71, Is. 3, 32002, 2005

And ALEPH Collaboration, CDF Collaboration

Current Research
I am currently working on the hadron collider experiments CDF at Fermilab and ATLAS at CERN. Using CDF data I am searching for Higgs boson decay to W+W- via Vector Boson Fusion production. ATLAS is in preparation and I am currently studying jet reconstruction algorithms.

Trager-Cowan, C
University of Strathclyde, Department of Physics

Imaging of cathodoluminescence zoning in calcite by scanning electron microscopy and hyperspectral mapping
Lee, MR; Martin, RW; Edwards, PR
JOURNAL OF SEDIMENTARY RESEARCH
Vol. 75, Is. 2, 313-322, 2005

PHYSICA STATUS SOLIDI (C)
Vol. 2, Is. 7, 2240-2245, 2005

Current Research
In collaboration with academic and industrial partners, I use electron backscatter diffraction mapping, electron channelling contrast imaging, cathodoluminescence hyperspectral mapping and low temperature cathodoluminescence spectroscopy to study and compare the crystallographic and luminescence properties of solid state materials. Recent work includes the study of geological materials and the investigation of strain, tilt and dislocations in nitride semiconductor thin films.
Turnbull, GA
University of St Andrews

*Effect of gain localization in circular-grating distributed feedback lasers*
Carleton, A; Tahraouhi, A; Krauss, TF; Samuel, IDW; Barlow, GF; Shore, KA
APPLIED PHYSICS LETTERS
Vol. 87, Is. 20, 201101, 2005

*Influence of grating characteristics on the operation of circular-grating distributed-feedback polymer lasers*
Carleton, A; Barlow, GF; Tahraouhi, A; Krauss, TF; Shore, KA; Samuel, IDW
JOURNAL OF APPLIED PHYSICS
Vol. 98, Is. 2, 23105, 2005

*Low threshold edge emitting polymer distributed feedback laser based on a square lattice*
Vasdekis, AE; Samuel, IDW; Andrew, P; Barnes, WL
APPLIED PHYSICS LETTERS
Vol. 86, Is. 16, 161102, 2005

Current Research
Graham Turnbull's research interests include organic semiconductors, laser physics and nonlinear optics, and photonics applications of soft lithography. He currently holds an EPSRC Advanced Fellowship for developing advanced solid-state lasers based on conjugated polymers. Current research projects include diode-pumped polymer laser systems and their applications, photonic crystal laser resonators, and polymer and liquid micro-optics.

Walker, A
University of Edinburgh

*A measurement of the CP-conserving component of the decay K-S(0) -> pi(+)pi(-)pi(0)*
Batley, JR; Lazzeroni, C; Munday, DJ; Patel, M; Slater, MW; Wotton, SA; et al.
PHYSICS LETTERS B

*Measurement of the K-L -> e(+)e(-)e(+)e(-) decay rate*
Lai, A; Marras, D; Bevan, A; Dosanjh, RS; Gershon, TJ; Hay, B; Kalmus, GE; et al.
PHYSICS LETTERS B

*Search for CP violation in K-0 -> 3 pi(0) decays*
Batley, JR; Dosanjh, RS; Gershon, TJ; Kalmus, GE; Lazzeroni, C; Munday, DJ; et al.
PHYSICS LETTERS B

*Measurement of the radiative K-e3 branching ratio*
NA48 Collaboration
PHYSICS LETTERS B
Walker, A  
Heriot-Watt University  

Operation of an optoelectronic crossbar switch containing a terabit-per-second free-space optical interconnect  
Fancey, SJ; Desmulliez, MPY; Forbes, MG; Casswell, JJ; Buller, GS; et al.  
IEEE JOURNAL OF QUANTUM ELECTRONICS  
Vol. 41, Is. 7, 1024-1036, 2005  

Wan, KK  
University of St Andrews  

Current Research  
Main interest lies in the foundations of quantum theory. Current research involves quantum nonlocality and separability, generalised formulations of quantum theory and macroscopic quantum systems, superconductivity and quantum circuits in particular. The studies are aimed to improve our understanding and formulation of macroscopic quantum systems with a view for possible applications for various quantum devises.  

Warburton, R  
Heriot-Watt University  

Absorption and photoluminescence spectroscopy on a single self-assembled charge-tunable quantum dot  
Seidl, S; Kroner, M; Dalgarno, PA; Hogele, A; Smith, JM; Ediger, M; Gerardot, BD; Garcia, JM; Petroff, PM; Karrai, K;  
PHYSICAL REVIEW B  
Vol. 72, Is. 19, 195339, 2005  

Dark exciton decay dynamics of a semiconductor quantum dot  
Dalgarno, PA; Smith, JM; Gerardot, BD; Govorov, AO; Karrai, K; Petroff, PM;  
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE  
Vol. 202, Is. 14, 2591-2597, 2005  

Spin-selective optical absorption of singly charged excitons in a quantum dot  
Hogele, A; Kroner, M; Seidl, S; Karrai, K; Atature, M; Dreiser, J; Imamoglu, A; Badolato, A; Gerardot, BD; Petroff, PM  
APPLIED PHYSICS LETTERS  
Vol. 86, Is. 22, 221905, 2005  

Controlled generation of neutral, negatively-charged and positively-charged excitons in the same single quantum dot  
Ediger, M; Dalgarno, PA; Smith, JM; Gerardot, BD; Karrai, K; Petroff, PM  
APPLIED PHYSICS LETTERS  
Vol. 86, Is. 21, 2119209, 2005
Voltage control of the spin dynamics of an exciton in a semiconductor quantum dot
Smith, JM; Dalgarno, PA; Govorov, AO; Karrai, K; Gerardot, BD; Petroff, PM
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 19, 197402, 2005

Voltage-controlled electron-hole interaction in a single quantum dot
Hogele, A; Seidl, S; Kroner, M; Karrai, K; Atature, M; Dreiser, J; Imamoglu, A;
Gerardot, BD; Petroff, PM
JOURNAL OF SUPERCONDUCTIVITY
Vol. 18, Is. 2, 245-249, 2005

Epitaxial lift-off of MBE grown II-VI heterostructures using a novel MgS release layer
Bradford, C; Curran, A; Balocchi, A; Cavenett, BC; Prior, KA
JOURNAL OF CRYSTAL GROWTH
Vol. 278, Is. 01-Apr, 325-328, 2005

Increasing the spectral separation between the emission lines from individual CdSe quantum dots through annealing
Graham, TCM; Tang, X; Prior, KA; Cavenett, BC
JOURNAL OF CRYSTAL GROWTH
Vol. 278, Is. 01-Apr, 743-746, 2005

Charged magneto-exciton states in semiconductor quantum dots
Urbaszek, B; McGhee, EJ; Schulhauser, C; Hogele, A; Karrai, K; Gerardot, BD; Petroff,
PM
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES
Vol. 26, Is. 01-Apr, 45-50, 2005

Epitaxial lift-off of ZnSe-based heterostructures using a II-VI release layer
Balocchi, A; Curran, A; Graham, TCM; Bradford, C; Prior, KA;
APPLIED PHYSICS LETTERS
Vol. 86, Is. 1, 11915, 2005

Two-photon optical-beam-induced current solid-immersion imaging of a silicon flip chip with a resolution of 325 nm
Ramsay, E; Pleynet, N; Xiao, D; Reid, DT
OPTICS LETTERS
Vol. 30, Is. 1, 26-28, 2005

Current Research
Richard Warburton leads the Nano-optics group. One major research theme is the physics of semiconductor quantum dots where we probe individual dots at low temperature both with photoluminescence and laser spectroscopies. The work aims at coherent control of individual quantum states. Another theme is the development of nano-optical instrumentation, currently a bio-microscope and novel micro-cavities
Ward, H
University of Glasgow

Results from the first burst hardware injections performed on GEO 600
Balasubramanian, R; Grote, H; Heng, IS; Hewitson, M; Luck, H; Smith, JR; Strain, KA; Willke, B
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 14, 3015-3028, 2005

The LTP experiment on the LISA Pathfinder mission
Anza, S; Armano, M; Balaguer, E; Benedetti, M; Boatella, C; Bosetti, P; Bortoluzzi, D; Brandt, N; Braxmaier, C; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

Successful testing of the LISA Technology Package (LTP) interferometer engineering model
Heinzel, G; Braxmaier, C; Caldwell, M; Danzmann, K; Draaisma, F; Garcia, A; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

LTP interferometer - noise sources and performance
Robertson, D; Killow, C; Hough, J; Heinzel, G; Garcia, A; Wand, V; Johann, U; Braxmaier, C
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; Barr, BW; Berukoff, S; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

Hydroxide-catalysis bonding for stable optical systems for space
Elliffe, EJ; Bogenstahl, J; Deshpande, A; Hough, J; Killow, C; Reid, S; Robertson, D; Rowan, S; Cagnoli, G
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, 2005

And LIGO Scientific Collaboration, TAMA Collaboration

Watson, IM
University of Strathclyde, Institute of Photonics

Roles for aluminium indium nitride insertion layers in fabrication of GaN-based microcavities
Bejtka, K; Rizzi, F; Edwards, PR; Martin, RW; Gu, E; Dawson, MD; Sellers, IR; Semonet, F
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE
Vol. 202, Is. 14, 2648-2652, 2005
Use of AlInN layers in optical monitoring of growth of GaN-based structures on free-standing GaN substrates
Liu, C; Gu, E; Dawson, MD; Edwards, PR; Martin, RW
APPLIED PHYSICS LETTERS
Vol. 87, Is. 15, 151901, 2005

Raman-scattering study of the InGaN alloy over the whole composition range
Hernandez, S; Cusco, R; Pastor, D; Artus, I; O’Donnell, KP; Martin, RW; Nanishi, Y; Calleja, E
JOURNAL OF APPLIED PHYSICS
Vol. 98, Is. 1, 13511, 2005

Angular dispersion of photons and phonons in a photonic crystal of selectively grown GaN pyramids containing an In_{x}Ga_{1-x}N quantum well structure
Coquillat, D; Torres, J; d’Yerville, MLV; Legros, R; Lascaray, JP; Liu, C; Martin, RW; Chong, HMH; De La Rue, RM
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE
Vol. 202, Is. 4, 652-655, 2005

Luminescence properties of isolated InGaN/GaN quantum dots
Martin, RW; Edwards, PR; Taylor, RA; Rice, JH; Na, JH; Robinson, JW; Smith, JD; Liu, C
PHYSICA STATUS SOLIDI A-APPLIED RESEARCH

Fabrication of natural diamond microlenses by plasma etching
Choi, HW; Gu, E; Liu, C; Griffin, C; Girkin, JM; Dawson, MD
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B
Vol. 23, Is. 1, 130-132, 2005

InGaN nano-ring structures for high-efficiency light emitting diodes
Choi, HW; Jeon, CW; Liu, C; Dawson, MD; Edwards, PR; Martin, RW; Tripathy, S; Chua, SJ
APPLIED PHYSICS LETTERS
Vol. 86, Is. 2, 21101, 2005

Structural and optical properties of MOCVD AlInN epilayers
MATERIALS RESEARCH SOCIETY SYMPOSIUM PROCEEDINGS 831, paper FF23.4., 2005

Characterisation of nitride thin films by electron backscatter diffraction and electron channeling contrast imaging
MATERIALS RESEARCH SOCIETY SYMPOSIUM PROCEEDINGS 892, paper FF26.11., 2005

Two-photon absorption from site-controlled InGaN/GaN quantum dots
Jarjour, R.A. Taylor, P.R. Edwards, R.W. Martin & I.M. Watson,
Current Research

Dr. Watson’s research involves metal organic chemical vapour deposition of semiconductors from the GaN family. This crystal growth technique can produce complex multilayer structures used in commercially important devices, including light-emitting diodes. The emphasis of research is typically on producing more novel structures for detailed physical studies, to address issues including non-radiative energy transfer and emission dynamics of quantum dots.

Watts, D
University of Edinburgh

The selection and performance of diamond radiators used in coherent bremsstrahlung experiments
Kellie, JD; Clive, PJM; Yang, GL; Beck, R; Evans, BC; Gordon, C; Hall, C; Harris, JW; Jones, RT; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 545, Is. 2/1/2006, 164-180, 2005

Near-threshold measurement of the He-4(\gamma,n) reaction.
Nilsson, B; et al.
PHYSICS LETTERS B
Vol. 626, 65-71, 2005

Measurement of the electric form-factor of the neutron at Q^{2} = 0.3- (\text{GeV}/c)^{2} to 0.8- (\text{GeV}/c)^{2}.
Glazier, DI; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 24, 101-109, 2005

Current Research
My research uses intense high energy photon and electron beams from the MAMI, JeffersonLab and MAXLab facilities to obtain new information on the structure of the nucleus and the nucleon. My main research projects will give information on nuclear three-body forces, neutron skins in heavy nuclei, magnetic moments of nucleon excited states and nucleon excitation spectrum. Present equipment projects include the construction of a particle identification sub-detector system and a nucleon polarimeter for use with the Crystal Ball at MAMI.
Wherrett, B
Heriot-Watt University

All-optical switching potentiality in Fabry-Perot devices containing poly-DCHD
Camacho, MA; Kar, AK; Bakarezos, M; Rangel-Rojo, R; Yamada, S; Matsuda, H; Kasai, H; Nakanishi, H
OPTICS COMMUNICATIONS

Wilson, J
Heriot-Watt University

Plasma surface modification of ePTFE vascular grafts
Jardine, S
PLASMA PROCESSES AND POLYMERS
Vol. 2, Is. 4, 328-333, 2005

Current Research
Microwave plasmas are applied to low temperature chemical vapour deposition of nanocrystalline silicon on textiles for flexible solar cells, and for higher temperature synthesis of diamond on flat or microspherical substrates. Plasmas are also being used to modify the surface of polymers for biomedical applications. Plasma gas temperatures and constituents are derived from optical emission and cavity ring-down spectroscopies.

Woan, G
University of Glasgow

Bayesian estimation of pulsar parameters from gravitational wave data
Dupuis, RJ;
PHYSICAL REVIEW D
Vol. 72, Is. 10, 102002, 2005

Optimal time-domain combination of the two calibrated output quadratures of GEO 600
Hewitson, M; Grote, H; Hild, S; Luck, H; Ajith, P; Smith, JR; Strain, KA; Willke, B;
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 20, 4253-4261, 2005

LISA source confusion: identification and characterization of signals
Umstatter, R; Christensen, N; Hendry, M; Meyer, R; Simha, V; Veitch, J; Vigeland, S;
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 18, S901-S911, 2005

A time-domain MCMC search and upper limit technique for gravitational waves of uncertain frequency from a targeted neutron star
Veitch, J; Umstatter, R; Meyer, R; Christensen, N
CLASSICAL AND QUANTUM GRAVITY
Bayesian modeling of source confusion in LISA data
Umstatter, R; Christensen, N; Hendry, M; Meyer, R; Simha, V; Veitch, J; Vigeland, S
PHYSICAL REVIEW D
Vol. 72, Is. 2, 22001, 2005

The status of GEO 600
Grote, H; Allen, B; Aufmuth, P; Aulbert, C; Babak, S; Balasubramanian, R; et al.
CLASSICAL AND QUANTUM GRAVITY
Vol. 22, Is. 10, S193-S198, 2005

And LIGO Scientific Collaboration, TAMA Collaboration

Current Research
I work in gravitational wave and radio astronomy, particularly Bayesian methods for ground and space-based detectors (LIGO, GEO600, LISA). This includes the ongoing search for gravitational waves from known radio pulsars, and MCMC methods applied to LISA data analysis. Through the European Square Kilometer Array Design Studies group (SKADS) I also work on the polarisation response of the SKA.

Wood, K
University of St Andrews

Estimating the porosity of the interstellar medium from three-dimensional photoionization modeling of H-II regions
Haffner, I.M; Reynolds, RJ; Mathis, JS; Madsen, G
ASTROPHYSICAL JOURNAL
Vol. 633, Is. 1, Part 1, 295-308, 2005

Disks and planets around massive white dwarfs
Livio, M; Pringle, JE
ASTROPHYSICAL JOURNAL

The effects of clumping on derived abundances in HII regions
Mathis, JS
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 360, Is. 1, 227-235, 2005

Modelling the photopolarimetric variability of AA Tau
O'Sullivan, M; Truss, M; Walker, C; Matthews, O; Whitney, B; Bjorkman, JE
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 358, Is. 2, 632-640, 2005

Observations and modeling of the inner disk region of T Tauri stars
Akeson, RL; Walker, CH; Eisner, JA; Scire, E; Penprase, B; Ciardi, DR; van Belle, GT; Whitney, B; Bjorkman, JE
Woods, PJ
University of Edinburgh

Recoil decay tagging study of Tm-146
Robinson, AP; Davids, CN; Seweryniak, D; Blank, B; Carpenter, MP; Davinson, T; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 25, 155-157, 2005

Particle-core coupling in the transitional proton emitters Tm-145, Tm-146, Tm-147
Seweryniak, D; Davids, CN; Robinson, A; Blank, B; Carpenter, MP; Davinson, T; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 25, 159-160, 2005

Reinvestigation of direct proton decay of Sr-105
Liu, Z; Schmidt, K; Mahmud, H; Munro, PSL; Blazhev, A; Doring, J; Grabe, H; et al.
PHYSICAL REVIEW C
Vol. 72, Is. 4, 47301, 2005

Proton decay: spectroscopic probe beyond the proton drip line
Seweryniak, D; Davids, CN; Robinson, A; Blank, B; Carpenter, MP; Davinson, T; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS
Vol. 31, Is. 10, S1503-S1508, 2005

Mirror energy differences in the A=31 mirror nuclei, S-31 and P-31, and their significance in electromagnetic spin-orbit splitting
Jenkins, DG; Lister, CJ; Carpenter, MP; Chowdhury, P; Hammond, NJ; et al.
PHYSICAL REVIEW C
Vol. 72, Is. 3, 31303, 2005

Multichannel R-matrix analysis of elastic and inelastic resonances in the Na-20, Na-21+p compound systems
Ruiz, C; Aliotta, M; Azuma, RE; Boyd, RN; Buchmann, L; Chen, A; Clarke, NM; et al.
NUCLEAR PHYSICS A
Vol. 758, 166C-169C, 2005

New limits for the F-18(p, alpha)O-15 rate in Novae
Kozub, RL; Bardayan, DW; Batchelder, JC; Blackmon, JC; Brune, CR; et al.
NUCLEAR PHYSICS A
Vol. 758, 753C-756C, 2005

Ground state proton radioactivity from Pr-121: When was this exotic nuclear decay mode first discovered?
Robinson, AP; Seweryniak, D; Davids, CN; Carpenter, MP; Hecht, AA; Peterson, D; Sinha, S; Walters, WB; Zhu, S
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 3, 32502, 2005
Multiparticle configurations in $N=84$ isotones located at the proton drip line
Seweryniak, D; Uusitalo, J; Bhattacharyya, P; Carpenter, MP; Cizewski, JA; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 5, 54319, 2005

Decay spectroscopy of suburanium isotopes following projectile fragmentation of U-238 at 1 GeV/u
Liu, Z; Kurcewicz, J; Woods, PJ; Mazzocchi, C; Attallah, F; Badura, E; Davids, CN; et al.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT
Vol. 543, Is. 02-Mar, 591-601, 2005

New constraints on the $F-18(p, \alpha)O-15$ rate in novae from the $(d, p)$ reaction
Kozub, RL; Bardayan, DW; Batchelder, JC; Blackmon, JC; Brune, CR; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 3, 32801, 2005

Multichannel R-matrix analysis of elastic and inelastic resonances in the Na-21+p compound system
Ruiz, C; Davinson, T; Sarazin, F; Roberts, I; Robinson, A; Buchmann, I; et al.
PHYSICAL REVIEW C
Vol. 71, Is. 2, 25802, 2005

Total absorption spectroscopy of the beta-delayed proton emitter Ba-117
Janas, Z; Batist, I; Doring, J; Gierlik, N; Kirchner, R; Kurcewicz, J; Mahmud, H; et al.
EUROPEAN PHYSICAL JOURNAL A
Vol. 23, Is. 3, 401-408, 2005

Level structure of Mg-22: Implications for the Na-21+p,gamma)Mg-22 astrophysical reaction rate and for the Mg-22 mass
Seweryniak, D; Carpenter, MP; Davinson, T; Janssens, RVF; Jenkins, DG; et al.
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 3, 32501, 2005

Wynne, K
University of Strathclyde, Department of Physics

An integrated description of terahertz generation through optical rectification, charge transfer, and current surge
Carey, JJ
OPTICS COMMUNICATIONS
Vol. 256, Is. 04-Jun, 400-413, 2005

Inter- and intramolecular hydrogen bonding in phenol derivatives: A model system for poly-L-tyrosine
Hunt, NT; Turner, AR
JOURNAL OF PHYSICAL CHEMISTRY B
Vol. 109, Is. 40, 19008-19017, 2005
Current Research
Klaas Wynne's research interest is the study of femtosecond chemical-reaction dynamics in the condensed phase particularly the role of terahertz collective modes. Some of our work concentrates on liquids and the types of motions describing the dynamics on a timescale of a few hundred femtoseconds. Of particular interest are proteins, their interactions with surrounding liquid, and sub-picosecond fluctuations driving biochemical reactions.

Zhao, H
University of St Andrews

Roche lobe sizes in deep-MOND gravity
ASTRONOMY & ASTROPHYSICS
Vol. 444, Is. 2, L25-L28, 2005

Dark minihalos with intermediate mass black holes
Silk, J
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 1, 11301, 2005

Current Research
My current research is on dark matter and modified gravity. If we believe in Newtonian/Einsteinian gravity, we find that we cannot explain the motions of stars in galaxies unless the galaxy contains much more material than those visible. This motivates the addition of dark matter in galaxies. Alternatively one could change the law of gravity to match the data without introducing dark matter. My recent research aims to highlight the success and challenges of both approaches.
2dFGRS Team

Large-scale structure from 2dFGRS
2dFGRS Team
MAPS OF THE COSMOS
Is. 216, 77-94, 2005

The 2dF Galaxy Redshift Survey: luminosity functions by density environment and galaxy type
2dFGRS Team
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, Is. 3, 1155-1167, 2005

The 2dF Galaxy Redshift Survey: power-spectrum analysis of the final data set and cosmological implications
2dFGRS Team
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 362, Is. 2, 505-534, 2005

The 2dF Galaxy Redshift Survey: stochastic relative biasing between galaxy populations
2dFGRS Team
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, Is. 1, 247-269, 2005

The 2dF Galaxy Redshift Survey: the nature of the relative bias between galaxies of different spectral type
2dFGRS Team
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY
Vol. 356, Is. 2, 456-474, 2005

ALEPH Collaboration

Bose-Einstein correlations in W-pair decays with an event-mixing technique
ALEPH Collaboration
PHYSICS LETTERS B

Single vector boson production in e(+)+e(-) collisions at centre-of-mass energies from 183 to 209 GeV
ALEPH Collaboration
PHYSICS LETTERS B

Two-particle correlations in pp, (p)over-bar(p)over-bar and (KS KS0)-K-0 pairs from hadronic Z decays
ALEPH Collaboration
PHYSICS LETTERS B
Vol. 611, Is. 2/1/2006, 66-80, 2005
BaBar Collaboration

Amplitude analysis of the decay $B^-/->\pi^+/-\pi^+/-\pi^-/+$
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 5, 52002, 2005

Branching fractions and CP asymmetries in $B^-0->\pi^+0\pi^0(0)$, $B^+->\pi^+\pi^0(0)$, and $B^+-> K+\pi^0(0)$
decays and isospin analysis of the $B^-->\pi^+\pi^-$ system
BaBar Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 18, 181802, 2005

Dalitz-plot analysis of the decays $B^-/->K^-/-\pi^+/-\pi^+/-\pi^-/-$
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 7, 72003, 2005

e^+(e^-) -> \pi^+\pi^+\pi^-\pi^-, K+K\pi^+\pi-, and K+K+K- cross sections at center-of-mass
energies 0.5-4.5 GeV measured with initial-state radiation
BABAR Collaboration
PHYSICAL REVIEW D
Vol. 71, Is. 5, 52001, 2005

Evidence for $B^+->(K)^0bar(0)K(0)$ and $B^-0-> K^-0(K)^0bar(0)$, and measurement of the
branching fraction and search for direct CP violation in $B^+-> K^-0 \pi^+$(+)
BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 22, 221801, 2005

Improved measurement of CP asymmetries in $B^-0->(c(\overline{c})0)K0(0)^*$ decays
BaBar Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 16, 161803, 2005

Improved measurements of CP-violating asymmetry amplitudes in $B^-0->\pi^+\pi^-0(0)$ decays
BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 15, 151803, 2005

Limit on the $B^-0-> rho(0)rho(0)$ branching fraction and implications for the Cabibbo-Kobayashi-
Maskawa angle alpha
BaBar Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 13, 131801, 2005

Measurement of branching fractions and charge asymmetries for exclusive B decays to charmonium
BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 14, 141801, 2005
Measurement of branching fractions and charge asymmetries in B+ decays to \( \eta \pi^+ \), \( \eta K^+ \), \( \eta \rho_0^+ \), and \( \eta(\rho') \pi^+ \), and search for B-0 decays to \( \eta K^0 \) and \( \eta \omega \)

BaBar Collaboration

PHYSICAL REVIEW LETTERS
Vol. 95, Is. 13, 131803, 2005

Measurement of CP asymmetries in \( B^- \rightarrow \phi K^0 \) and \( B^- \rightarrow K^+ K^- K_0^*(0) \) decays

BABAR Collaboration

PHYSICAL REVIEW D
Vol. 71, Is. 9, 91102, 2005

Measurement of CP observables for the decays \( B^-/\rightarrow (D\overline{CP}K) K^0*(+/-) \)

BaBar Collaboration

PHYSICAL REVIEW D
Vol. 72, Is. 7, 71103, 2005

Measurement of double charmonium production in \( e^+(e^-) \) annihilation at root \( s=10.6 \) GeV

BABAR Collaboration

PHYSICAL REVIEW D
Vol. 72, Is. 3, 31101, 2005

Measurement of the \( (B\overline{B})_0 \rightarrow D^{(*)+} l^-(\nu\overline{\nu}) \) decay rate and vertical bar \( V_{cb} \) vertical bar

BABAR Collaboration

PHYSICAL REVIEW D
Vol. 71, Is. 5, 51502, 2005

Measurement of the \( B^+ \rightarrow p(p\overline{p} K^0) \) branching fraction and study of the decay dynamics

BaBar Collaboration

PHYSICAL REVIEW D
Vol. 72, Is. 5, 51101, 2005

Measurement of the \( B^- \rightarrow D^- D_s^{(*)+} \) and \( D_s^{-} \rightarrow \phi \pi^+ \) branching fractions

BABAR Collaboration

PHYSICAL REVIEW D
Vol. 71, Is. 9, 91104, 2005

Measurement of the branching fraction and decay rate asymmetry of \( B \rightarrow D^- \pi^+ \pi^- \pi K^0 \)

BaBar Collaboration

PHYSICAL REVIEW D
Vol. 72, Is. 7, 71102, 2005

Measurement of the branching ratios \( \Gamma(D_s^{(*)+} \rightarrow D_s^{(*)+} \pi^0)/\Gamma(D_s^{(*)+} \rightarrow \phi \pi^+) \) and \( \Gamma(D_s^{(*)+} \rightarrow D^- \pi^- \pi^0)/\Gamma(D_s^{(*)+} \rightarrow D^- \pi^- \gamma) \)

BABAR Collaboration

PHYSICAL REVIEW D
Vol. 72, Is. 9, 91101, 2005

Measurement of the Cabibbo-Kobayashi-Maskawa angle \( \gamma \) in \( B^- \rightarrow \phi K^0 \) with a Dalitz analysis of \( D \rightarrow K^+ S(0) \pi^- \pi^+ \)

BaBar Collaboration
Measurement of the ratio $B(B\to(DK^-)K^{*0})/B(B\to D^{*-0}\pi(-))$ and of the CP asymmetry of $B\to(DCP+K)K^{*-0}$ decays
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 71, Is. 3, 31102, 2005

Measurement of the time-dependent CP-violating asymmetry in $B(0)\to K_S(0)\pi(0)\gamma$ decays
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 5, 51103, 2005

Measurement of time-dependent CP asymmetries and the CP-odd fraction in the decay $B(0)\to D^{*-}+D^*$. BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 15, 151804, 2005

Measurement of time-dependent CP asymmetries in $B(0)\to (DD^-+/+)D^-(-)/$ decays
BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 13, 131802, 2005

Measurements of $B$ meson decays to omega $K^*$ and omega rho
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 71, Is. 3, 31103, 2005

Measurements of branching fractions and time-dependent CP-violating asymmetries in $B\to \eta'$ $K$ decays
BaBar Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 19, 191802, 2005

Measurements of the $B\to X_s\gamma$ branching fraction and photon spectrum from a sum of exclusive final states
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 5, 52004, 2005

Measurements of the branching fraction and CP-violation asymmetries in $B\to f(0)(980)K_S(0)$
BaBar Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 4, 41802, 2005

Observation of a broad structure in the $\pi(+)\pi(-)/\psi$ mass spectrum around 4.26 GeV/$c^2$
BaBar Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 14, 142001, 2005
Precision measurement of the Lambda(+)(*)(c) baryon mass
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 5, 52006, 2005

Production and decay of Xi(0)(c) at BABAR
BaBar Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 14, 142003, 2005

Search for a charged partner of the X(3872) in the B meson decay B -> X-K, X-> J/psi pi(-)pi(0)
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 71, Is. 3, 31501, 2005

Search for B -> J/psi D decays
BABAR Collaboration
PHYSICAL REVIEW D
Vol. 71, Is. 9, 91103, 2005

Search for CP violation and a measurement of the relative branching fraction in D+ -> K-K+ pi(+) decays
BABAR Collaboration
PHYSICAL REVIEW D
Vol. 71, Is. 9, 91101, 2005

Search for decays of B-0 -> e(+)e(-), B-0 -> mu(+)mu(-), B-0 -> e(+/-)mu(-/+) decays
BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 22, 221803, 2005

Search for factorization-suppressed B -> chi K-c((*)(c)) decays
BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 17, 171801, 2005

Search for lepton-flavor and lepton-number violation in the decay tau(-) -> l(-)h(+-)h '(-)
BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 19, 191801, 2005

Search for radiative penguin decays B+ -> rho(+)gamma, B-0 -> rho(0)gamma, and B-0 -> omega gamma
BABAR Collaboration
PHYSICAL REVIEW LETTERS
Vol. 94, Is. 1, 11801, 2005

Search for the decay tau(--) -> 4 pi(-)3 pi(+)pi(0)nu(tau)
BABAR Collaboration
PHYSICAL REVIEW D
Search for the radiative decay $B^- \rightarrow \phi \gamma$
BABAR Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 9, 91103, 2005

Search for the rare decay $(B\bar{B}) \rightarrow D^{*0} \gamma$
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 5, 51106, 2005

Study of $b \rightarrow c$ interference in the decay $B \rightarrow (K^{+}\pi^{-})(D^{(*)})K^{(*)}$
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 7, 71104, 2005

Study of $B \rightarrow \pi l \nu u$ and $B \rightarrow \rho l \nu u$ decays and determination of $|V_{ub}|$
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 5, 51102, 2005

Study of the $B^- \rightarrow J/\psi \pi \nu \nu$ decay and measurement of the $B^- \rightarrow X(3872)K^-$ branching fraction
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 71, Is. 7, 71103, 2005

Time-integrated and time-dependent angular analyses of $B \rightarrow J/\psi K \pi$: A measurement of $\cos 2\beta$ with no sign ambiguity from strong phases
BaBar Collaboration
PHYSICAL REVIEW D
Vol. 71, Is. 3, 32005, 2005

CDF Collaboration

Search for new high-mass particles decaying to Lepton pairs in $p(p)\overline{p}$ collisions at $\sqrt{s}=1.96$ TeV
CDF Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 25-Jan, 252001, 2005

Search for $B_s(0) \rightarrow \mu^+\mu^-$ and $B_s(0) \rightarrow \mu^+\mu^-$ decays in $p(p)\overline{p}$ collisions with CDF II
CDF Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 22, 221805, 2005
Search for supersymmetric Higgs bosons in the di-tau decay mode in p(p)over-bar collisions at root s=1.8 TeV
CDF Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 7, 72004, 2005

Search for new physics using high-mass tau pairs from 1.96 TeV p(p)over-bar collisions
CDF Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 13, 131801, 2005

Search for Lambda(0)(b)-> p pi and Lambda(0)(b)-> pK decays in p(p)over-bar collisions at root s=1.96 TeV
CDF Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 5, 51104, 2005

Search for first-generation scalar leptoquarks in p(p)over-bar collisions at root s=1.96 TeV
CDF Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 5, 51107, 2005

K-S(0) and Lambda(0) production studies in p(p)over-bar collisions at root s=1800 and 630 GeV
CDF Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 05-Jan, 52001, 2005

Measurement of the cross section for t(t)over-bar production in p(p)over-bar collisions using the kinematics of lepton plus jets events
CDF Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 05-Jan, 52003, 2005

Measurement of B(t -> Wb)/B(t -> Wq) at the Collider Detector at Fermilab
CDF Collaboration
PHYSICAL REVIEW LETTERS
Vol. 95, Is. 10-Jan, 102002, 2005

Measurement of the t(t)over bar production cross section in p(p)over bar collisions at root s=1.96 TeV using lepton plus jets events with semileptonic B decays to muons
CDF Collaboration
PHYSICAL REVIEW D
Vol. 72, Is. 3, 32002, 2005

Search for long-lived doubly charged Higgs bosons in p(p)over-bar collisions at root s=1.96 TeV
CDF Collaboration
PHYSICAL REVIEW LETTERS
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Search for Higgs bosons decaying into bb(-) and produced in association with a Vector boson in pp-collisions at root s=1.8 TeV
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