

MPS Research Update

February 2020

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Staff mentions in the press, public engagement

Seb Weidt has given a talk at SDNP Stargazing South Downs event in Lewes (20th February 2020).

Seb Weidt has also given a talk at Brighton Cafe *Scientifique* (11th February 2020).

Istvan Kiss gave a short opinion/interview piece on BBS South East in the BBC evening news bulletin on the 6th of Feb at 18:30 and then in the morning of 7th of February about the third case of Corona Virus infection. Listen here <https://www.bbc.co.uk/iplayer/episode/m000f3gb/south-east-today-late-news-06022020>

Antonella De Santo and Mark Sutton – “Arriving with a Big Bang: new physics-inspired art installation comes to Brighton” (www.sussex.ac.uk/staff/newsandevents/?id=51290).

Marco Peccianti, Luana Olivieri, Juan Totero Gongora, and a team of research students have “built a new type of THz camera capable of detecting THz electromagnetic waves with unprecedented accuracy” (<http://www.sussex.ac.uk/staff/newsandevents/?id=51331>).

Chris Abel, Nick Ayres, and scientists at the University of Sussex - *Scientists one step closer to understanding the mystery of matter in the Universe* – “Scientists at the University of Sussex have measured a property of the neutron – a fundamental particle in the universe - more precisely than ever before. Their research is part of an investigation into why there is matter left over in the universe, that is, why all the antimatter created in the Big Bang didn’t just cancel out the matter” (<http://www.sussex.ac.uk/staff/newsandevents/?id=51442>).

Awards & Recognitions

Steve Wilkins participated in Webb Public Engagement steering committee meeting at ROE (3rd February 2020).

Areas of Knowledge Exchange

No news reported in this area.

Talks Delivered

Steve Wilkins was invited to give a talk at the Cambridge/IOA colloquium (27th February 2020).

Steve Wilkins was also invited to give a talk at a Sheffield seminar (18th February 2020).

Impact

No news reported in this area.

Significant Research Outcomes
No news reported in this area.
Other news
No news reported in this area.

Grant Report

Submitted

PI/Co-I	Principal Funder	Funder Programme	Project Title	Overall Applied Amount £
Giesl, Peter	EPSRC	Research Grant	Dimension of Attractors and Entropy of Dynamical Systems	378,624
Hartnell, Jeff	STFC	STFC Follow-On Funding	Medical applications of opaque scintillator radiation detectors	87,971
Krueger, Peter	Wellcome Trust	WT Technology Development Grants	Development of Magnetic Brain Quantum Imaging Chips for full Magnetoencephalography (quantum-MEG)	1,499,847
Lakkis, Omar	London Mathematical Society	LMS - Atiyah UK-Lebanon Fellowship	Numerical approaches to Monge-Ampère type equation arising in geometric optics [External]	3,125
Lynch, Peter	ROYAL COMMISSION FOR THE EXHIBITION OF 1851	RCE1851 Research Fellowships	Salt-water batteries for domestic energy storage using layered nanomaterials	179,029
Ogilvie, Sean	Leverhulme Trust	Leverhulme Early Career Fellowship	Semiconductor heterojunctions in nanosheet ensembles: printed 2D optoelectronics	93,000
Peccianti, Marco	ROYAL ACADEMY OF ENGINEERING (CHARITY)	RAE Chair in Emerging Technologies	Highly scalable platform for ultrafast terahertz surface emitters	2,780,000
Totero, Juan	Leverhulme Trust	Leverhulme Early Career Fellowship	Route to Artificial Intelligence (AI) control of micro-comb lasers	93,000

Forecasted

Kruger, Peter	Innovate UK	Innovate - Commercialising quantum tech: large collaborative projects round 1	Quantum sensors for end-of-line battery testing	520,710
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Awarded

Duering, Bertram	London Mathematical Society	Travel Grant	Travel Grant for 8th European Congress of Mathematics	586
Iliev, Ilian	STFC	STFC Astronomy Consolidated Grant 2020-2023	University of Sussex Astronomy Consolidated Grant 2020-2023	1,237,874
Salvatore, Fabrizio	STFC	Research Grant	Support for the ATLAS Inner Detector Trigger	45,820

Department of Mathematics. Publications deposited in SRO during February 2020					
To view the publication, enter the five-digit SRO ID number as http://sro.sussex.ac.uk/nnnnn					
Sussex Author	SRO ID	Status	Author(s)	Output Title	Volume Title
Chlebik, Miroslav	89692	Published	Rasheed, Maan A; Chlebik, Miroslav	Blow-up rate estimates and blow-up set for a system of two heat equations with coupled nonlinear neumann boundary conditions	Iraqi Journal of Science
Madzvamuse, Anotida	89977	Accepted	Madzvamuse, Anotida; Sfakianakis, Nikolaos; Chaplain, Mark	A hybrid multiscale model for cancer invasion of the extracellular matrix	Multiscale Modeling & Simulation (MMS)

Department of Physics. Publications deposited in SRO during February 2020					
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Sussex Author	SRO ID	Status	Author(s)	Output Title	Volume Title
Dunningham, Jacob A	89934	Accepted	Dunningham, Jacob; Rubio, Jesus	Bayesian multi-parameter quantum metrology with limited data	Physical Review A: Atomic, Molecular and Optical Physics
Garraway, Barry M	89691	Published	Dalton, B J; Garraway, B M; Reid, M D	Tests for Einstein-Podolsky-Rosen steering in two-mode systems of identical massive bosons	Physical Review A
Loveday, Jonathan N	90022	Accepted	Tempel, E; Norberg, P; Tuvikene, T; Bensby, T; Chiappini, C; Christlieb, N; Cioni, M-R L; Comparat, J; Davies, L J M; Guiglion, G; and 5 other(s)	Probabilistic ?bre-to-target assignment algorithm for multi-object spectroscopic surveys	Astronomy and Astrophysics
Nation, Charlie	88764	Published	Nation, Charlie; Porras, Diego	Quantum chaotic fluctuation-dissipation theorem: effective Brownian motion in closed quantum systems	Physical Review E
Oliver, Seb J	89694	Published	Luchsinger, K M; Lacy, M; Jones, K M; Mauduit, J C; Pforr, J; Surace, J A; Vaccari, M; Farrah, D; Gonzales-Solares, E; Jarvis, M J; and 5 other(s)	The host galaxies of micro-jansky radio sources	Astronomical Journal
Oliver, Seb J	89695	Published	Canavezes, A; Springel, V; Oliver, S J; Rowan-Robinson, M; Keeble, O; White, S D M; Saunders, W; Efstathiou, G; Frenk, C S; McMahon, R G; and 2 other(s)	The topology of the IRAS Point Source Catalogue Redshift survey	Monthly Notices of the Royal Astronomical Society

Oliver, Seb J	90071	Accepted	Ford, Elizabeth; Rooney, Philip; Hurley, Peter; Oliver, Seb; Bremner, Stephen; Cassell, Jackie	Can the use of Bayesian analysis methods correct for incompleteness in electronic health records diagnosis data? Development of a novel method using simulated and real-life clinical data	Frontiers in Public Health
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