

Particle, condensed matter and quantum physics: links via Maxwell's equations

Wednesday 18 – Thursday 19 November 2015

Organised by Professor Anatoly Zayats, Professor John Ellis CBE FRS and Professor Roy Pike FRS

THE
ROYAL
SOCIETY

DAY 1				DAY 2			
SESSION 1 Maxwell and universe Chair: John Ellis CBE FRS		SESSION 2 Maxwell and condensed matter Chair: Joe Bhaseen		SESSION 3 Maxwell and electromagnetism Chair: Anatoly Zayats		SESSION 4 Maxwell and quantum Chair: Roy Pike FRS	
09.00	Welcome by Royal Society & lead organiser						
09.05	Jonathan Butterworth Isolated photons, dressed electrons and jets: defining the final state in high energy collisions	14.15	Jorge Rehn Emergent coulomb physics in Heisenberg spin liquids	09.00	Nikolay Zheludev Electromagnetic doughnuts: localised and propagating toroidal excitations	13.30	Ruth Oulton Can we make a spin qubit activated switch for lossless quantum photonic circuits?
09.30	Nick Mavromatos The MOeDAL experiment at LHC: broadening the LHC horizons	14.30	Karthik Sasihithlu A study of the effect of curvature on near-field radiative heat transfer	09.30	Irina Khromova Direct observation of resonant response in dielectric and conductive micro-particles through near-field terahertz time-domain spectroscopy	14.00	Pieter Kok Quantum information processing with photons in dielectric circuits
10.00	Discussion	14.45	Paloma Huidobro Graphene, plasmons and transformation optics	09.45	Matthias Kraft Transformation optics applied to electron-loss problems in plasmonics	14.15	Josh Nunn Light-matter interactions for scalable quantum photonics
		15.00	Discussion	10.00	Discussion	14.30	Discussion
10.30	Coffee	15.30	Tea	10.30	Coffee	15.00	Tea
11.00	Anthony Lasenby Maxwell in one equation, at home in space-time	16.00	Joe Bhaseen From Einstein-Maxwell to quantum transport	11.00	Cyriaque Genet From spinning fields to chiral optical forces	15.30	Peter Knight Photonic contributions to quantum technology
11.30	Tevong You Finite-Energy Electroweak Monopoles at the LHC						
11.45	Mehdi Nosrati Magnetic current and new Modifications of Maxwell's equations	16.30	Discussion	11.30	Francisco Rodríguez-Fortuño Spin Hall effects in photonics	16.00	Discussion
12.00	Discussion			11.45	Matthew Foreman Multipoles, spherical t-designs and polarization state reconstruction		
12.30	Veronica Sanz Higgs Physics at the Run2 LHC	16.45	Basil Mahon The history of Maxwell's equations	12.00	Discussion	16.15	Panel discussion Chair: John Ellis
13.00	Discussion						
13.15	Lunch	17.15	Close	12.30	Lunch	17.00	Close