

Condensed Matter Physics in the Cities 2019

week 1: 1 - 5 July

Monday 1 July **11 Bedford Square, London, WC1B 3RF**

Focus days on “New avenues for emergence in out-of-equilibrium matter”

- 9:00 – 9:50 Registration and informal discussions over coffee
9:50 – 10:00 Welcome and Introduction
10:00 – 11:05 **Johannes Knolle** (Imperial College), Disorder-Free Localization: Absence of Ergodicity without quenched Disorder and logarithmic out-of-time ordered correlators
11:05 – 11:40 Coffee break
11:40 – 12:45 **Ruben Verresen** (Technical University Munich), Gapless topological phases and symmetry-enriched quantum criticality
12:45 – 14:15 Lunch break
14:15 – 15:20 **Dieter Jaksch** (Oxford), Nonequilibrium Dynamics in Quantum Matter
15:20 – 16:00 Tea Break
16:00 – 17:05 **Arijeet Pal** (University College London), Scale Invariant Entanglement Negativity at the Many-body Localization transition
17:05 – 18:10 **John Saunders** (Royal Holloway University of London), Anomalous thermalization of ^3He spins in a 2D ^4He matrix: many-body localization?
18:10 – 18:30 Concluding discussions

Tuesday 2 July **11 Bedford Square, London, WC1B 3RF**

Focus days on “New avenues for emergence in out-of-equilibrium matter”

- 9:00 – 10:05 **Max McGinley** (Cambridge), Topology of Quantum Systems Out of Equilibrium
10:05 – 10:45 Coffee break
10:45 – 11:50 **Marzena Szymanska** (UCL), Driven-dissipative quantum fluids
11:50 – 13:00 **John Chalker** (Oxford): Minimal models for chaotic quantum dynamics in spatially extended many-body systems.
13:00 – 14:30 Lunch break
14:30 – 15:35 **Achilleas Lazarides** (University of Loughborough), Quantum order at infinite temperature, time crystals, and dissipation
15:35 – 16:05 Tea Break
16:05 – 17:10 **Gregoire Ithier** (Royal Holloway University of London), Typical dynamics and unconventional stationary states of an embedded quantum system
17:10 – 17:30 Wrap up and final discussions
17:30 - Informal discussions encouraged

Wednesday 3 July **Rutherford Appleton Laboratory - Pickavance Lecture Theatre, R22**

- 11:00 - 11:45 **Seamus Davis** (Cornell University, University College Cork, University of Oxford), Magnetic Monopole Noise
11:45 - 12:00 Discussion

- 12:00 - 12:45 **Kazumasa Miyake** (Center for Advanced High Magnetic Field Science, Osaka University), Aspects of extra “magnetization” in varieties of superconductors and possible scenarios: Spin-orbit-phonon interaction as an origin of spin-triplet superconductivity
- 12:45 - 13:00 Discussion
- Lunch Break
- 14:00 - 14:45 **Liling Sun** (Institute of Physics, Beijing), Anomalous phenomena and physics in pressurized superconducting materials
- 14:45 - 15:00 Discussion

Thursday 4 July

Royal Holloway College, Egham, TW20 0EX

16:00 - 17:00 Open discussion at Department of Physics, room T118

Evening Lecture - to attend, please register at the link:

<https://quantumtechnology.eventbrite.co.uk/>

- 18:30 - 19:30 **Seamus Davis** (Cornell University, University College Cork, University of Oxford)
Quantum Technology - Challenges and Opportunities
Shilling Lecture Theatre, Royal Holloway College, Egham, TW20 0EX

Friday 5 July

11 Bedford Square, London, WC1B 3RF

- 10:00 - 10:45 **Piers Coleman** (Rutgers/RHUL), New insights into Strange and Bad metals from Heavy Fermions
- 10:45 - 11:15 Discussion
- 11:15 - 11:45 Coffee/Tea
- 11:45 - 12:30 **Philip Niklowitz (RHUL)**, SDW order and low-energy excitations near the masked FM quantum critical point in NbFe₂
- 12:30 - 13:00 Discussion

Practical informations

Conference website:

<https://www.royalholloway.ac.uk/research-and-teaching/departments-and-schools/physics/physics-events/2019-07-01-condensed-matter-physics-in-the-city/>

Focus days on “New avenues for emergence in out-of-equilibrium matter” (1-2 July):

<https://research.kent.ac.uk/theoryandsimulation/condensed-matter-physics-in-the-cities-2019-focus-days-on-new-avenues-for-emergence-in-out-of-equilibrium-matter/>

Evening lecture registration website (4 July):

<https://quantumtechnology.eventbrite.co.uk/>

Directions:

11 Bedford Square, London, WC1B 3RF: <https://intranet.royalholloway.ac.uk/staff/campus-life/bedford-square-and-senate-house/bedford-square-and-senate-house.aspx?>

Royal Holloway College, Egham Hill, Egham, Surrey TW20 0EX - Shilling Lecture

Theatre: <https://www.royalholloway.ac.uk/about-us/more/how-to-find-us/>

Rutherford Appleton Laboratory: <https://stfc.ukri.org/about-us/where-we-work/rutherford-appleton-laboratory/how-to-get-to-rutherford-appleton-laboratory/>