Theoretical and Experimental Magnetism Meeting
28-29 June, 2012

The Cosener’s House, Abingdon, Oxfordshire, UK

Organised by
Centre for Materials Physics and Chemistry (STFC), ISIS Facility, Hartree Theory Center, Hubbard Theory Consortium, SEPnet, CECAM, The Institute of Physics Magnetism and Neutron Scattering Groups

The Centre for Materials Physics and Chemistry at STFC, SEPnet, CECAM, ISIS Facility and the Institute of Physics Magnetism and Neutron Scattering groups are organising a joint workshop, the *Theoretical and Experimental Magnetism Meeting* which will be held at The Cosener’s House, Abingdon, UK on 28-29th June, 2012. The meeting is partly funded by the IOP Magnetism and Neutron scattering groups, Hartree centre, SEPnet, ISIS excitations, muon and theory groups. The meeting will start at 10:30 am on Thursday 28th June and is expected to end at 16:30 on Friday 29th June. The meeting is intended for anybody who wishes to become familiar with current research in magnetism in condensed matter physics. Students and post-doctoral scientists are especially welcome. Talks will cover current research in both theoretical and experimental magnetism. *The meeting will be preceded by the ISIS Excitations User Group Meeting, 27th June 2012, at The Cosener’s House.*

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<th>Invited Speakers</th>
<th>Samir Lounis (Jülich)</th>
<th>Topics:</th>
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<td>Luigi Amico (Catania)</td>
<td>Roderich Moessner (Dresden)</td>
<td>Exotic Superconductivity</td>
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<td>Stephen Blundell (Oxford)</td>
<td>Joe Paddison (ISIS)</td>
<td>Quantum Phase Transition</td>
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<td>Silke Buehler-Paschen (Vienna)</td>
<td>Toby Perring (ISIS)</td>
<td>Orbital Ordering</td>
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<td>Premi Chandra (New Jersey)</td>
<td>Francis Pratt (ISIS)</td>
<td>Low-dimension Magnetism</td>
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<td>Roy Chantrell (York)</td>
<td>Jorge Quintanilla (Kent)</td>
<td>Frustrated systems</td>
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<td>Sungkyun Choi (Oxford)</td>
<td>Henrik Ronnow (Lausanne)</td>
<td>Molecular and Nano</td>
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<td>Pengcheng Dai (Tennessee)</td>
<td>Qimiao Si (Houston)</td>
<td>Magnetism</td>
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<td>Pascale Deen (Lund)</td>
<td>Ross Springell (Bristol)</td>
<td>Manganites and</td>
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<td>Igor di Marco (Uppsala)</td>
<td>Peter Thalmeier (Dresden)</td>
<td>Multiferroics</td>
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<td>Markus Gruner (Duisburg)</td>
<td>Oliver Waldmann (Freiburg)</td>
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<td>Adrian Hillier (ISIS)</td>
<td>Helen Walker (Hamburg)</td>
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<td>Roger Johnson (Oxford)</td>
<td>Takashi Yanagisawa (Tokyo)</td>
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<td>Martin Long (Birmingham)</td>
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There is no registration fee for attending the meeting. If you are interested in attending the meeting, you must register at http://www.rhul.ac.uk/physics/research/condensedmatter/theoryofcondensedmatter/temm/temm2012.aspx, or by send an E-mail to Devashibhai.adroja@stfc.ac.uk before 15 June 2012. Places will be limited, so please register as soon as possible to secure your place.

**Accommodation:** A number of rooms have been reserved at The Cosener’s House for accommodation during the meeting. Participants who wish to book a room should make arrangements to pay for their accommodation direct with the Cosener’s House, + 44 (0)1235 523 198 or E-mail: coseners@stfc.ac.uk

webpage: http://www.stfc.ac.uk/About+STFC/44.aspx

**Poster presentations:** If you would like to display a poster of your work, then please inform D.T. Adroja (Devashibhai.adroja@stfc.ac.uk) as soon as possible.

A detailed programme of the meeting is given below.

We look forward to seeing you at The Cosener’s House on 28th June 2012.

We acknowledge financial support from Hartree Center, Hubbard Theory Consortium, CECAM, SEPnet, ISIS Facility, ISIS excitations, musr and theory groups, IOP magnetism and neutron scattering groups.

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For further information of travel and accommodation please visit: http://www.stfc.ac.uk/About+STFC/44.aspx
Thursday 28th June

10:00-10:30 Coffee and tea/Registration

10:30-12:35 Session 1: Exotic Superconductivity
Chairman: Toby Perring

10:30 Magnetism and orbital-selective Mott physics in iron based superconductors
Qimiao Si (Rice University)

11:00 The common features in spin waves of iron-based superconductors
Pengcheng Dai (Tennessee)

11:30 Strongly correlated electrons and high-temperature superconductivity
Takashi Yanagisawa (Tokyo)

12:00 Anomalous thermodynamic power laws in nodal superconductors
Jorge Quintanilla (Kent)

12:20 Non-unitary triplet pairing in the centrosymmetric superconductor LaNiGa2
Adrian Hillier (ISIS Facility)

12:35 – 14:00 Lunch

14:00 – 16:00 Session 2 Heavy Fermion and Quantum Magnetism
Chairman: Keith McEwen
Spin exciton resonance in heavy fermion metals and Kondo semiconductors  
*Peter Thalmeier (Dresden)*

Quantum criticality in a cubic heavy fermion compounds  
*Silke Buehler-Paschen (Vienna)*

Hastatic Order in URu$_2$Si$_2$  
*Premi Chandra (New Jersey)*

Entanglement transition in quantum magnets  
*Luigi Amico (Catania)*

16:00 – 16:30  **Coffee and tea**

16:30 – 18:15 **Session 3  Manganites and Multiferroics**  
*Chairman: Nikitas Gidopoulos*

**16:30**  
Do Zener polarons exist in the CE-type phase of a layered manganite?  
*Toby Perring (ISIS Facility)*

**16:55**  
Shedding light on the magnetoelectric mechanism in type II multiferroics  
*Helen Walker (Hamburg)*

**17:20**  
Disorder in the Laves phase compound ZrMn$_2$  
*Pascale Deen (Lund)*

**17:40**  
Giant magnetically induced ferroelectric polarisation in CaMn$_7$O$_{12}$  
*Roger Johnson (Oxford)*

**18:00**  
Beta-Mn: Emergent Simplicity in a Complex Structure  
*Joe Paddison (ISIS Facility)*

18:15 – 19:15  **Posters and Drinks**

19:15 – 21:30  **Conference Dinner in The Cosener’s House**
Friday 29th June

08:50 – 10:15 Session 4 Low-dimensional and quantum magnetism
Chairman: Jon Goff

08:50 Vacancy-induced spin textures and their interactions
Rodric Moessner (Dresden)
09:20 Triangular-lattice quantum spin liquids probed with μSR
Francis Pratt (ISIS Facility)
09:45 Breaking the Waves – from Hubbard heritage to spinons in 2D
Henrik M. Ronnow (EPFL-Lausanne)

10:15 – 10:45 Coffee and tea

10:45 – 12:45 Session 5 Computational magnetism
Chairman: Leon Petit

10:45 First-principles investigation of dynamical magnetic excitations in adatoms and dimers
Samir Lounis (Jülich)
11:15 Correlation effects in the electronic structure of transition metals and their compounds
Igor Di Marco (Uppsala)
11:45 Phase stability and adaptive nanotwinning in magnetic shape memory alloys
Markus Gruner (Duisburg)
12:15 Ultrafast heating as a sufficient stimulus for magnetisation reversal in ferrimagnets
Roy Chantrell (York)

12:45 – 14:00 Lunch

14:00 – 16:10 Session 6 Transition metals magnetism
Chairman: Ross Stewart
14:00  μSR investigations of novel magnetism (TBC)  
Stephen Blundell (Oxford)

14:30  *Ruthenium based double perovskites: A playground for multiple-q magnetism*
Martin Long (Birmingham)

14:55  *Magnetic Cluster Excitations (TBC)*
Oliver Waldmann (Freiburg)

15:25  Magnetic order in the bilayered iridate, Sr$_3$Ir$_2$O$_7$  
*Ross Springell (Bristol)*

15:50  Spin waves & revised crystal structure of honeycomb iridate Na$_2$IrO$_3$  
*Sungkyun Choi (Oxford)*

16:10  Close of Meeting

16:30  **Transport to Heathrow and Didcot**