

Hubbard Theory Consortium, SEPnet, **HARTREE CENTRE, CECAM**

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.*

<p><u>Invited Speakers</u> Luigi Amico (Catania) Stephen Blundell (Oxford) Silke Buehler-Paschen (Vienna) Premi Chandra (New Jersey) Roy Chantrell (York) Sungkyun Choi (Oxford) Pengcheng Dai (Tennessee) Pascale Deen (Lund) Igor di Marco (Uppsala) Markus Gruner (Duisburg) Adrian Hillier (ISIS) Roger Johnson (Oxford) Martin Long (Birmingham)</p>	<p>Samir Lounis (Jülich) Roderich Moessner (Dresden) Joe Paddison (ISIS) Toby Perring (ISIS) Francis Pratt (ISIS) Jorge Quintanilla (Kent) Henrik Ronnow (Lausanne) Qimiao Si (Houston) Ross Springell (Bristol) Peter Thalmeier (Dresden) Oliver Waldmann (Freiburg) Helen Walker (Hamburg) Takashi Yanagisawa (Tokyo)</p>	<p><u>Topics:</u> Exotic Superconductivity Quantum Phase Transition Orbital Ordering Low-dimension Magnetism Frustrated systems Molecular and Nano Magnetism Manganites and Multiferroics Magnetic Monopole</p>
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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 June2012.

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.

Organisers: D.T. Adroja, T.G. Perring, K.A. McEwen, W.M. Temmerman, J. Goff, A.T. Boothroyd, S.M. Hayden, J. R. Stewart, P.G. Radaelli and N. Harrison

Secretary: D.T. Adroja
ISIS Facility
Rutherford Appleton Laboratory
Chilton, Didcot
Oxon OX11 0QX, UK

Phone: +44 (0) 1235 445797 (07881858082)
FAX: +44 (0) 1235 445720
E-mail: DEvashibhai.adroja@stfc.ac.uk

For further information of travel and accommodation please visit: <http://www.stfc.ac.uk/About+STFC/44.aspx>

Theoretical and Experimental Magnetism Meeting 28-29 June 2012

The Cosener's House, Abingdon, Oxfordshire, UK

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*

- 14:00 Spin exciton resonance in heavy fermion metals and Kondo semiconductors
Peter Thalmeier (Dresden)
- 14:30 Quantum criticality in a cubic heavy fermion compounds
Silke Buehler-Paschen (Vienna)
- 15:00 *Hastatic Order in URu₂Si₂*
Premi Chandra (New Jersey)
- 15:30 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 ZrMn₂*
Pascale Deen (Lund)
- 17:40 Giant magnetically induced ferroelectric polarisation in CaMn₇O₁₂
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

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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 μ SR
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 μ SR 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, $\text{Sr}_3\text{Ir}_2\text{O}_7$
Ross Springell (Bristol)
- 15:50 Spin waves & revised crystal structure of honeycomb iridate Na_2IrO_3
Sungkyun Choi (Oxford)
- 16:10** Close of Meeting

16:30 Transport to Heathrow and Didcot