



The Abdus Salam
**International Centre
for Theoretical Physics**

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IAEA
International Atomic Energy Agency

Workshop on Current Trends in Frustrated Magnetism

9 - 13 February 2015

**School of Physical Sciences
Jawaharlal Nehru University (JNU), New Delhi, India**

The Abdus Salam International Centre for Theoretical Physics (ICTP, Trieste, Italy) in cooperation with Jawaharlal Nehru University (JNU, New Delhi, India) is organizing a Workshop on "Current Trends in Frustrated Magnetism" to be held in New Delhi from 9 - 13 February 2015. The objective of the Workshop is to provide a means for experts and young researchers from developing as well as developed countries to come together and become aware of the exciting new developments in the field of frustrated magnetism, with a healthy mix of pedagogy with advances. Besides serving as a meeting point for active workers in the field, it will offer a much needed opportunity for other participants to learn about and get interested in this beautiful and challenging subject.

Frustrated magnetism has long been a subject of active research and continues to be so in the present times. It deals with the problems of both classical as well as quantum nature wherein the competing interactions or lattice geometries or disorder so "frustrate" the spins that it becomes hard for them to attain any order. Starting as a model exercise of antiferromagnetically interacting Ising spins on triangular lattice many decades ago, the subject has grown tremendously into a diverse field with current interests. While the resonating valence bond (RVB) theory of high-T_c superconductivity in cuprates helped resurge it in the 90's, it has subsequently prospered very well on its own.

The Workshop will focus on the progress in theoretical and experimental studies of frustrated magnets with emphasis on Kagomé, Shastry-Sutherland and Kitaev problems, magnetic monopoles in the spin-ice pyrochlores, exotic quantum phases and transitions thereof, and emulation of quantum spin models using ultra-cold atoms on optical lattices. Their possible applications in material science and quantum information processing will also be discussed.

The activity will combine lectures which pedagogically summarize the main challenges and recent results in each area with short presentations. Poster sessions will be arranged to stimulate discussions. An introductory session aimed at giving the young participants an overview of the basic concepts in frustrated magnetism will be held in the afternoon of 8th February to facilitate their participation in the workshop during 9-13 February 2015.

TOPICS INCLUDE:

- Quantum/classical frustrated systems
- Systems with spin-orbit interaction
- Metal-insulator transition on frustrated lattices
- Entanglement & frustration
- Disordered local and itinerant magnets
- Magnetic structures in ultra-cold atomic systems

Participation

Scientists from all countries that are members of the United Nations, UNESCO or IAEA may attend the Workshop. As it will be conducted in English, participants should have an adequate working knowledge of this language. Although the main purpose of the Centre is to help research workers from developing countries, through a programme of training activities within a framework of international cooperation, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend. As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants, who are nationals of, and working in, a developing country. Such support is available only for those who attend the entire activity. There is no registration fee.

How to Apply

The Online Application Form can be accessed at the ICTP activity website:

http://cdsagenda5.ictp.it/full_display.php?id=a14239

Activity Secretariat

Workshop on Current Trends in Frustrated Magnetism smr2699
the Abdus Salam International Centre for Theoretical Physics Strada Costiera 11, 34151 Trieste, Italy
phone: +39-040-2240226, Fax: +39-040-22407226, E-mail: smr2699@ictp.it
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DIRECTORS

Federico Becca
(CNR-IOM & SISSA, Trieste)

Mikhail Kiselev
(ICTP, Trieste)

Brijesh Kumar
(JNU, New Delhi)

Satyabrata Patnaik
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(* confirmation awaited)

DEADLINES

for requesting participation
(with financial support)

31 October 2014

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(without financial support
and not needing visa)

10 December 2014