ICTP − The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy

smr1348/Announcement

SECOND EUROPEAN SUMMER SCHOOL on
MICROSCOPIC QUANTUM MANY−BODY THEORIES and their APPLICATIONS

3 − 14 SEPTEMBER 2001

Miramare − Trieste, Italy

Co−sponsored by:
European Commission*
International School for Advanced Studies (SISSA)

A Summer School on "Microscopic Quantum Many−Body Theories (QMBT) and their Applications" will be held from 3 to 15 September 2001 at the Abdus Salam International Centre for Theoretical Physics in Trieste. It will be directed by Profs. Adelchi Fabrocini (Univ. Pisa, Italy), Stefano Fantoni (SISSA, Trieste, Italy) and Eckhard Krotscheck (J. Kepler University, Linz, Austria). The School is a sequel to a similar event that was held in Valencia, Spain, in September 1997.

The School is aimed at graduate and post−graduate students who seek training in the above field. It will both cover advances in standard many−body techniques and also introduce some of the most innovative recent developments. Thus, Correlated Basis Function (CBF) Theory, Coupled Cluster Method (CCM), Green's Functions Theory, and Stochastic Simulation Methods will be reviewed. Hyperspherical Expansions and Density Functional Theory will be presented and discussed. The school will be organized around a number of keynote lectures held by speakers who are not only highly recognized specialists in their field, but also well known for their broad perspectives and their ability and willingness to exploit such connections. These in−depth keynote lectures will be supplemented by a series of specialized lectures which will address timely subjects such as applications to molecules, clusters, nuclei, confined geometries, and Bose−Einstein condensation, in addition to experimental aspects of the field.

The List of Lecturers and topics (as of 3 April 2001) includes:

G. BERTSCH (Seattle)
Many−body aspects of density functional theory with applications to metal clusters

A.D. JACKSON (Copenhagen)
Parquet theory and its applications

E. KROTSCHECK (Linz)
Theory of correlated basis functions

J. NAVARRO (Valencia)
Coupled Cluster theory and its applications

A. POLLS (Barcelona)
Variational many−body theory and helium physics

S. ROSATI (Pisa)
Hyperspherical function expansion methods in few−body physics

M. SAARELA (Oulu)
Elementary excitations and dynamic structure of quantum fluids

G. SENATORE (Trieste)
Qunatum simulations

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The List of Seminar Speakers and topics (as of 3 April 2001) includes:

E. ARIMONDO (Pisa)
Experimental and Phenomenological Aspects of Bose−Einstein Condensation

A. FABROCINI (Pisa)
Theoretical Aspects of Bose−Einstein Condensation

S. FANTONI (Trieste)
The Nuclear Many−Body Problem

H. GODFRIN* (Grenoble)
Two−dimensional 3He: Fermi Liquids, Spin Liquids, Multi−spin magnetism

P. MARTIN (Stuttgart)
Experimental Studies of Electronic Shells in Metal Clusters

A.F.G. WYATT (Exeter)
Quantum Evaporation, Sticking and Scattering

*to be confirmed

The teaching objective of these schools is to train and inform the participants in the basic workings of the most powerful many−body techniques presently available along with selected new developments. Lecturers will emphasize material that is not available in a pedagogical form in the literature. The participants will be introduced to the rationale behind the most important theories − their respective strengths in specific applications, together with the technical requirements for their implementation. Having gained both a generic working knowledge and a broad perspective, the participants are expected to acquire good professional opportunities in a large number of groups employing many−body techniques in both the pure research and applied fields. They also will benefit from direct interaction with accomplished lecturers and leading scientists, as well as from discussions and shared experience with students from other regions of the EC.

*Directorate−General XII, Science, Research and Development,
Human Potential Programme,
High Level Scientific Conferences , HPCF−1999−00197

Scientists and students from all countries that are members of the UN, UNESCO or IAEA can attend the School. The main purpose of the ICTP is to

help research workers from developing countries through a programme of training activities within a framework of international cooperation. However, students and post-doctoral scientists from developed countries are also welcome to attend. As the School will be conducted in English, participants should have an adequate working knowledge of that language. There is no registration fee for participants from developing countries.

As a rule, travel and subsistence expenses of the participants are borne by their home institutions. A very limited number of grants are available for scientists from developing countries who will be selected by the Organizers. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fare (or at least half-fare) from their home country. Such financial support is available only to those who attend the entire activity.

A generous contribution from the European Commission will make it possible to provide support for some young researchers of the European Union.

The closing date for requesting participation is 15 MAY 2001. The decision of the Organizers will be communicated to all candidates as soon as possible thereafter. The completed "Request for Participation" form, to be found at the back of this Bulletin, (also obtainable via e-mail: smr1348@ictp.trieste.it, by typing on the subject line "get index", or via WWW server: http://www.ictp.trieste.it/) should be completed, signed and posted to:

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