



The Abdus Salam
International Centre for Theoretical Physics


United Nations
Educational, Scientific
and Cultural Organization


International Atomic
Energy Agency



**WINTER COLLEGE
ON
QUANTUM AND CLASSICAL ASPECTS
OF INFORMATION OPTICS**

**30 January - 10 February 2006
Miramare-Trieste, Italy**

The Abdus Salam International Centre for Theoretical Physics (ICTP), in collaboration with the International Commission for Optics (ICO), the Optical Society of America (OSA), the International Society for Optical Engineering (SPIE) and the International Society on Optics Within Life Sciences (OWLS), will organize a *Winter College on Quantum and Classical Aspects of Information Optics*, which will be held at the ICTP, Trieste, Italy, from *30 January to 10 February, 2006*.

DIRECTORS: M.L. Calvo (Universidad Complutense de Madrid, Spain)
P. Knight (Imperial College London, U.K.)
P. Tombesi (University of Camerino, Italy)

LOCAL ORGANIZER: G. Denardo (ICTP, Italy)

The College will expose the participants to modern issues of both classical and quantum optics in the processing, transmission and storage of information. The programme consists of lectures by international experts, group discussions and laboratory demonstrations. The aim is to provide the background needed to follow the most advanced literature.

MAIN TOPICS

- *Optical coherence: the classical insight*
- *Angular momentum properties of light beams*
- *Characterization of classical optical beams*
- *Basic experiments in classical information optics*
- *Fundamentals of holographic data storage*
- *Digital processing of information and digital holography*
- *Optical manipulations with quantum information*
- *Quantum repeaters and quantum computing*
- *Introduction to photonic quantum information*
- *Introduction to multi-photon quantum logic*

The **LAMP** (Laser, Atomic and Molecular Physics) programme will include group discussions and internal seminars by participants. Those who intend to deliver a seminar are expected to come to ICTP prepared with all the material needed for their talk.

PARTICIPATION

Scientists and students from all countries that are members of the UN, UNESCO or IAEA can attend the College. As it will be conducted in English, participants should have an adequate working knowledge of that language.

As a rule, travel and subsistence expenses of the participants are borne by the home institutions. However, limited funds are available for some participants from developing countries, who will be selected by the Organizers. Such financial support is available only for those who attend the entire activity. 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. There is no registration fee to attend the College.

The closing date for requesting participation is **30 SEPTEMBER 2005**. The request for participation form, to be found at the back of the Bulletin, (also obtainable from the ICTP WWW Server: <http://agenda.ictp.it/smr.php?1738>), should be completed, signed and sent to:

**the Abdus Salam International Centre for Theoretical Physics
Winter College on Quantum and Classical Aspects of Information Optics (c/o Ms. Valerie Shaw)
SMR: 1738, Strada Costiera 11
I-34014 Trieste, Italy**

*If sending your applications by e-mail, please save and send file attachments in RFT format to:
smr1738@ictp.it*

The decision of the Organizers will be communicated to all candidates as soon as possible.

Telephone: +39-040-2240541 Telefax: +39-040-224531 E-mail: smr1738@ictp.it

August



International Society on
Optics Within Life Sciences
Non-Profit Organization established on August 13, 1990



**Deadline for
Requesting Funds**

30 SEPTEMBER 2005