



# International Advanced Workshop on the Frontiers of Plasma Physics

5 – 16 July 2010

*Miramare, Trieste, Italy*

This two-week intensive workshop on cutting edge plasma physics has a dual purpose:

- 1) to expose the experienced scientists and young researchers to new theoretical, computational, and experimental developments of modern plasma physics, and
- 2) to bring them up to date on major developments in the crucial fields of nonlinear plasma physics, multi-scale turbulence and structures in plasmas, intense laser plasma interactions, plasma based high-energy charged particle acceleration, high-energy density physics, nanostructures in quantum plasmas, dusty plasmas as soft condensed matter physics, burning problems in fusion physics (both ICF and MCF). This workshop will focus on the basic and applied aspects of plasma physics that are at the cutting edge and that are at the interface of other discipline in physics (e.g. high-energy physics, condensed matter physics, applied mathematics, alternative energy sources, environmental sciences, nonlinear geophysical flows and space weather, medicine, etc).

## **GOAL AND OBJECTIVES**

The objectives of this international workshop are to exchange scientific and technological information in the emerging areas of basic and applied plasma physics that are at the cross road of other cross-disciplinary fields of physics. We expect a transfer of scientific know-how from the industrial to the developing world. The International perspective provided in this workshop is expected to be beneficial to the participants from developing countries as well as for their national programmes.

## **TOPICS INCLUDE**

Fundamentals of multiscale turbulence and coherent nonlinear structures in space and laboratory plasmas; Wave-wave and wave-particle interactions; Intense photon-photon and photon-plasma interactions; Plasma based high-energy charged particle accelerators; Collective interactions in high-energy density plasmas; Applications of plasma physics in medicine; Plasma-assisted nanotechnology (e.g. nanostructures in dense quantum systems); Dusty plasmas for environmental sciences.

## **PARTICIPATION**

Scientists and students from all countries which 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 program 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 and who are not more than 45 years of age. Such support is available only for those who attend the entire activity. There is no registration fee.

## **HOW TO APPLY FOR PARTICIPATION**

The application form can be accessed at the activity website: <http://agenda.ictp.it/smr.php?2155>  
Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form **before 1 March 2010**.

## **SECRETARIAT:**

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## **DEADLINE**

for requesting participation:

**1 March 2010**