

the Abdus Salam International Centre for Theoretical Physics (ICTP) will organize the

# Second IAEA Technical Meeting on the Theory of Plasma Instabilities: Transport, Stability and their Interaction

**2 - 4 March 2005**  
*Miramare, Trieste, Italy*

## PURPOSE AND NATURE

Fusion energy can be produced if the plasma instabilities are successfully controlled. These plasma instabilities currently preclude the effective confinement of high temperature and dense plasma for a time long enough for economic net energy production. Many different types of plasma instabilities have been found in plasma devices. These have been partially explained by theoretical models but still the knowledge is incomplete and has to be supplemented by further theoretical and experimental efforts. New ideas have recently emerged such as the interplay between different types of instabilities, cascades of instabilities and their interaction with plasma turbulences, etc., to explain observed plasma phenomena. The "Second IAEA Technical Meeting (IAEA-TM) on the Theory of Plasmas Instabilities: Transport, Stability and their Interaction" will explore these ideas and build upon the previous meeting held at Kloster Seeon, Germany, in 2002. For further information regarding this meeting please see ([www.ipp.mpg.de/eng/for/veranstaltungen/archiv/tmseeon\\_04\\_2002](http://www.ipp.mpg.de/eng/for/veranstaltungen/archiv/tmseeon_04_2002)).

## MAIN OBJECTIVES

The Meeting will provide a forum for open discussion on the physics issue of linear and non-linear theory in large and small scale plasma instabilities, integrated modeling, turbulence and magneto-hydrodynamic (MHD) effects. Special attention will be paid to the modeling and prediction of instabilities generated by fast alpha particles and their role in the plasma confinement in burning plasmas. This subject is of significant importance in view of the ITER project and future fusion power plants performance.

## PRELIMINARY LIST OF TOPICS:

**Improved Confinement**

**Turbulence and Nonlinear Instabilities**

**Energetic Particle Physics**

**Interaction of Macroscopic Instabilities and Transport Process**

## PROGRAMME

The Meeting will include invited and contributed papers (orals and posters) presented in sessions devoted to special topics with subsequent discussions. Plenary sessions will be followed by poster sessions to enhance topical discussions. It is expected that all talks will be approximately 20 minutes with 5 minutes for discussion. All participants are expected to present either an Oral or a Poster Presentation. Orals speakers are asked to expose their slides at the poster session. Prospective participants are requested to submit an abstract with their application forms.

## PARTICIPATION

Scientists and students from all countries which are members of the United Nations, UNESCO or IAEA may attend the Meeting. 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.

The **Application Form** is obtainable from the ICTP WWW server: <http://agenda.ictp.trieste.it/agenda/current/fullAgenda.php?email=0&ida=a04317> (which will be constantly up-dated) or from the activity Secretariat. It should be completed and returned before **1 December 2004** to:

Second IAEA Technical Meeting on the Theory of Plasma Instabilities:  
Transport, Stability and their Interaction (smr 1647)  
the Abdus Salam International Centre for Theoretical Physics  
Strada Costiera 11, 34014 Trieste, Italy.

*or*  
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## DIRECTOR

**Artur Malaquias**  
(IAEA, Vienna, Austria)

## INTERNATIONAL ADVISORY COMMITTEE

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(UKAEA, UK)

**Boris Breizman**  
(Texas University, USA)

**Kimitaka Itoh**  
(NIFS, Japan)

## LOCAL ORGANIZER

**Brian Stewart**  
(ICTP, Trieste, Italy)

## DEADLINES

for requesting participation and  
abstract submission  
**1 December 2004**

paper selection results  
**20 December 2004**

