The Abdus Salam International Centre for Theoretical Physics

50th Anniversary 1964–2014

United Nations Educational, Scientific and Cultural Organization

IAEA International Atomic Energy Agency

IAEA-ICTP Joint Conference on Models and Data for Plasma-Material Interaction in Fusion Devices 3-7 November 2014

ICTP - Miramare, Trieste, Italy

In cooperation with IAEA International Atomic Energy Agency

The Abdus Salam International Centre for Theoretical Physics (ICTP, Trieste, Italy) in cooperation with the International Atomic Energy Agency (IAEA, Vienna, Austria) is organizing a Conference on "Models and Data for Plasma-Material Interaction in Fusion Devices" to be held at ICTP in Trieste from 3 – 7 November 2014. The conference will bring together researchers from fusion energy science and materials science in order to review advances in computational studies of plasma-material interaction and evolution of material microstructure in fusion devices, including effects of radiation damage and with special interest in hydrogen (tritium) trapping and transport in wall material.

TOPICS

- Direct uses of ab initio and semi-empirical quantum mechanical codes for study of material microstructure and trapping and transport of hydrogen and helium in fusion wall materials.
- Parameterization of results of quantum mechanical calculations in the form of interaction potentials and transition rates for classical models.
- Molecular Dynamics, Binary Collision Approximation and Kinetic Monte Carlo studies of plasma-material interaction, radiation damage processes and material and surface evolution.
- Multi-method and multi-scale simulations; acceleration approaches.
- Uncertainty estimation and uncertainty propagation from quantum mechanical calculations through interaction potentials to outputs of longer time-scale calculations.
- Parameterization of material microstructure and of its effect on mobility and trapping of hydrogen and helium in fusion wall materials.
- Simulation and interpretation of diagnostics of material microstructure, radiation damage, hydrogen and helium in fusion materials and plasma-material interaction.

Please see also: https://www-amdis.iaea.org/Workshops/ICTP2014/.

PARTICIPATION

Scientists from all countries that are members of the United Nations, UNESCO or IAEA may attend the Conference. Participants should be active researchers in the field of computational materials science, fusion materials or plasma-material interaction and it is expected that all participants will present a poster or a talk on their work related to the conference topic. A one-page abstract of such a contribution is requested as a part of the application procedure.

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 for participation: The application form for the Conference can be found on the activity website at: http://agenda.ictp.it/smr.php?2614. Once in the website, comprehensive instructions will guide you step-by-step on how to fill out and **submit online** the application form. Please apply **not later than 23 June 2014**. Under "other information" applicants should attach a one-page abstract (PDF, DOC, DOCX, RTF or TXT) of their scientific contribution to the conference. The organizers will assign the format (talk or poster), but please indicate a preference if applicable.

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February 2014

DIRECTORS:

B. J. Braams and H.-K. Chung
(IAEA, Vienna, Austria)

LOCAL ORGANIZER:

S. Scandolo (ICTP, Trieste, Italy)

INVITED SPEAKERS:

J. P. Allain (Univ. of Illinois, USA)
C. S. Becquart (Univ. of Lille, France)
C. Björkas (Univ. of Helsinki, Finland)
A. Caro (LANL, Los Alamos, USA)
M. J. Demkowicz (MIT, Cambridge, USA)
Huiqiu Deng (Hunan Univ., China)
D. M. Duffy (UCL, London, U.K.)
P. Erhart (Chalmers U. of Tech., Sweden)
Y. Ferro (Aix-Marseille Univ., France)
M. G. Ganchenkova (MEPhI, Moscow, Russia)
R. J. Harrison (SUNY Stony Brook and BNL, New York, USA)
A. Hassanein (Purdue University, USA)
Qing Hou (Sichuan University, China)
S. Irle (Nagoya University, Japan)
D. Kato (NIFS, Toki City, Japan)
P. S. Krstic (SUNY Stony Brook, USA)
Ch. Linsmeier (FZ Jülich, Germany)
Chang-Song Liu (CAS-ISSP, Hefei, China)
Guang-Nan Luo (CAS-IPP, Hefei, China)
A. Manhard (IPP Garching, Germany)
J. Marian (LLNL, Livermore, USA)
M.-C. Marinica (CEA, Gif-sur-Yvette, France)
K. Morishita (Kyoto University, Japan)
T. Muroga (NIFS, Toki City, Japan)
D. Nguyen-Manh (CCFE, Abingdon, U.K.)
K. Nordlund (Univ. of Helsinki, Finland)
T. Oda (SNU, Seoul, Korea)
L. Sandoval (LANL, Los Alamos, USA)
T. Suzudo (JAEA, Tokai-mura, Japan)
M. Warrier (BARC, Mumbai, India)
B. D. Wirth (UT, Knoxville, USA)
Haixuan Xu (UT, Knoxville, USA)
Jijun Zhao (Dalian U. of Tech., China)
Hong-Bo Zhou (Beihang Univ., China)

DEADLINE 23 June 2014