

MC 2011

Angra 2 Nuclear Power Unit Ten Years of Commercial Operation Startup

The International Conference on Mathematics and Computational Methods applied to Nuclear Science and Engineering (MC 2011) is a part of a series of topical meetings organized by the Mathematics and Computation Division of the American Nuclear Society (ANS) and this 2011 version is also promoted by the Brazilian Association for Nuclear Energy (ABEN).

As humankind seeks abundant and environmentally responsible energy in the coming decades, the renaissance of nuclear power will undoubtedly become reality as it is a proven technology and has the potential to generate virtually limitless energy with no greenhouse gas emissions during operations. In addition, basic research and nuclear technology applications in chemistry, physics, biology, agriculture, health and engineering have been showing their importance in the innovation of nuclear technology applications with sustainability.

MC 2011 will provide an international forum to scientists from around the world to present their most recent work and exchange ideas on a powerful class of methodologies extensively used for solving mathematical models of physical phenomena and processes applied to nuclear science and engineering. One of the aims is to promote new research tools and procedures that help link Mathematics, Applied Sciences and Technology. Therefore, the MC 2011 will offer an opportunity for direct information exchange between participants from both academia and industry.

Being held in Brazil, MC 2011 provides a forum to celebrate the 10th Anniversary of Angra 2 Nuclear Power Unit commercial operation startup on February 1, 2001, located in Angra dos Reis city, state of Rio de Janeiro.

Participation in the MC 2011 will also provide an opportunity to visit Rio de Janeiro, the wonderful city, which is the mosaic of enchantments scattered between the sea and the mountains.

The interdisciplinary MC 2011 technical program will consist of plenary sessions, workshops, parallel oral presentation sessions and poster sessions. Papers are solicited in the following subject categories:

- Computational Reactor Physics
- Computational Thermal Hydraulics
- Computational Nuclear Fuel Cycle / Repository Performance
- Computational Biomedical Applications
- Computational Materials Sciences
- Computational Plasma Physics/Fusion
- Methods for Advanced Reactor Concepts
- Methods for Research Nuclear Reactors: Radioisotope Production / Materials Irradiation and Testing / Neutron Beam Utilization
- Neutral and Charged Particle Transport
- Nuclear Reactor Analysis
- Nuclear Production of Hydrogen
- Optimization Methods and Artificial Intelligence

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The next ANS Mathematics & Computations Topical meeting will take place on May 8-12, 2011 in Copacabana, Rio de Janeiro, Brazil. The meeting focuses on all areas of computational nuclear science and related application fields, and aims to provide a forum for the exchange of ideas and presentation of state of the art applied mathematical and computational methods against the backdrop of one of the world's most beautiful cities. Reactor Physics naturally figures prominently in the program, and RPD members are thus cordially invited to attend and present their latest work.

The deadline for paper submission is November 30, 2010. The paper should be a concise, self-contained document that will enable the reviewers to establish the novelty and relevance of the work in the context of its field of application. Subject to acceptance, the paper will have subsequent opportunity of being augmented/re-edited, for publication in the conference proceedings. Selected papers will be chosen for publication in a special issue of Nuclear Science and Engineering. More details of the conference can be found at www.mc2011.org.

Home

Dear Participant,

On behalf of the organizing committee of MC 2011 we welcome you to the conference and to Rio de Janeiro, Brazil. We are honored to have the opportunity of hosting the world's leading computational nuclear science conference. Like elsewhere in the world, nuclear energy is also experiencing a renaissance in South America, and we hope that bringing the conference to Brazil will provide added impetus and motivation to the continent's computational nuclear scientists for the development of advanced modeling and simulation tools for the design and safe operation of new nuclear reactors.

The conference also celebrates two landmarks in nuclear energy: 60 years of the first production of electricity by EBR-I and 10 years of commercial operation of the Angra-2 reactor in Brazil. Both endeavors benefitted to a great extent from numerical and mathematical methods of analysis, and they in turn have provided valuable validation for further development of these tools.

The conference interdisciplinary program, comprising more than 260 papers presented over 4 days, reflects the state-of-the-art of applied computational nuclear science. We are pleased to acknowledge that over a third of these papers involve the participation of students which heralds a bright future for the field of applied modeling and simulation.

Organizing an event like this involves considerable effort and dedication, and we are grateful to all those who gave their time and input to ensure a successful conference. Particular appreciation goes to the Latin American Section of the American Nuclear Society for its leading organizing role and to TDN EVENTOS for conference logistics. We also recognize and thank the help of ABEN and ABACC as well as the financial support of Brazil's Federal Government through CNPq, Rio de Janeiro's State Government through FAPERJ, Brazilian Nuclear Industries - INB and Eletronuclear.

Lastly, we thank you for your participation, and we hope you enjoy the presentations and discussions, as well as your stay in one of the most beautiful cities in the world.

Best regards,



International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering
May 8 to 12, 2011 - Rio de Janeiro - Brazil

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