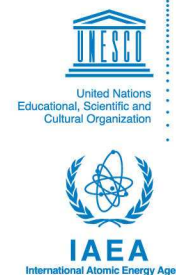




The Abdus Salam
International Centre for Theoretical Physics



Joint ICTP-TWAS Caribbean School on Electronic Structure Fundamentals and Methodologies

27 August - 21 September 2012

(Cartagena, Colombia)

The Abdus Salam International Centre for Theoretical Physics, in collaboration with the University of Cartagena, the Industrial University of Santander, the University del Magdalena and the Third World Academy of Sciences (TWAS), is organizing a **Joint ICTP-TWAS Caribbean School on Electronic Structure Fundamentals and Methodologies (an Ab-initio Perspective)**, which will be held in Cartagena, Colombia, from 27 August to 21 September 2012.

Electronic structure methods are becoming a fundamental tool of investigation in condensed matter physics, materials science, biology, and nanoscience. These methods are based on the solution of the Schrödinger equation for the electrons, without any empirical input, and allow for the description of the mechanical, vibrational, electrical, magnetic and several other properties of solids with "chemical" accuracy. This is a rapidly evolving field which also offers people in developing countries the opportunity to carry out cutting-edge theoretical research with relatively low financial investment in equipment. The purpose of this school is to strengthen the scientific base of junior scientists by exposing them to a selection of international high-level lectures combined with computational laboratories aimed at training students to the independent use of the codes for their own research.

Structure of the School

- 1st Week: Preliminary Concepts: Quantum mechanics, Solid State Physics, Electronic structure methods
- 2nd and 3rd Week: Advanced concepts in Electronic structure methods and computer laboratories
- 4th Week: Introduction to high-performance computing (optional)

Participants with a sufficient knowledge of the topics of the 1st week may be selected for admission directly to the 2nd and 3rd weeks.

Participation

Applicants from all countries that are members of the United Nations, UNESCO or IAEA may attend. However, priority will be given to candidates from the region. As the Workshop will be conducted in English, participants should have an adequate working knowledge of this language. Limited funds are available for participants who are not more than 45 years old. *There is no registration fee.*

HOW TO APPLY FOR PARTICIPATION

The Online Application can be accessed at the activity website: <http://agenda.ictp.it/smr.php?2390>. Comprehensive instructions will guide you step-by-step on how to fill out and submit the application form. Kindly send all file attachments in Word or Acrobat format.

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IN COLLABORATION WITH:



Directors

Carlos L. Beltrán Ríos
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Javier Antonio Montoya
(Universidad de Cartagena)

Sandro Scandolo
(ICTP, Italy)

Invited Speakers

Moreno Barisevic (DEMOCRITOS, Italy)
Stefano Baroni (SISSA, Italy)
Carlos J. Barrios (UIS, Colombia)
Carlos Beltrán (UIS, Colombia)
Stefano Cozzini (DEMOCRITOS, Italy)
Gilberto Javier Díaz Toro (ULA, Venezuela)
Stefano Fabris (DEMOCRITOS, Italy)
Ralph Gebauer (ICTP, Italy)
Yiannis Georgieu (BULL, France)
Rafael Gonzalez (UniNorte)
Jorge Kohanoff (Belfast, UK)
Layla Martin Samos (DEMOCRITOS, Italy)
J.A. Montoya (UniCartagena)
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Application
DEADLINE

1 May 2012