



The Abdus Salam
International Centre for Theoretical Physics



International School on
Non-linear Dynamics in Complex Systems

31 October - 11 November 2011

Yaoundé, Cameroon

The Abdus Salam International Centre for Theoretical Physics, in collaboration with the University of Yaoundé I, organize an International School on Non-linear Dynamics in Complex Systems, to be held at Yaoundé from 31st October 2011 to 11th November 2011.

Nonlinear Physics is currently one of the very active fields of research worldwide because of the rich insights it provides onto the mechanisms of a broad range of processes in biophysics, geophysics, quantum electronics, optical communications, and material sciences etc. Over the past three decades or so, a wealth of models and approaches have been suggested to explain space-time evolutions of several of these processes based on nonlinear concepts with emerging new nonlinear equations. On one side, exact solution methods are being explored in Mathematical Physics using sophisticated concepts, on the other hand the applicability of these ideas has extended well beyond mathematics, for example to condensed matter physics and biological physics.

This School aims at bringing together students and leading experts with diverse backgrounds in applied, theoretical and computational physics, to share insights on the state-of-the-art of efficient forefront analytical and computational approaches to models governing nonlinear physical processes. The activity will cover both fundamental aspects and applications. Focus will be on the nonlinear models appearing quite recurrently in current literature, which find widespread applications in a broad range of contexts including condensed matter and plasma physics, optics and biology.

TOPICS:

- * **Fundamental problems and concepts in non-linear dynamics**
- * **Applications in**
 - **Classical and quantum condensed matter**
 - **Biological physics**
 - **Plasma physics**
 - **Non-linear optics**

Participation

Scientists and students from all countries which are members of the United Nations, UNESCO or IAEA may attend the School. Priority will be given to advanced undergraduates, graduate students, post-doctoral researchers, faculty and research scientists from Africa.

As lectures and talks will be given in English, participants should have an adequate working knowledge of that 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, and who are not more than 45 years old. 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?2286>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

You may address general requests for information to:

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co-sponsored by:

- APSA, Association pour la Promotion Scientifique de l'Afrique, Paris
- CIMPA, International Centre for Pure and Applied Mathematics, Nice
- ENS, Ecole Normale Supérieure de Lyon
- EPS, European Physical Society, Mulhouse
- IUPAP, International Union of Pure and Applied Physics, London

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LOCAL ORGANIZERS:

Alain M. DIKANDE
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(University of Douala, Cameroon)

INVITED LECTURERS include:

- T. Dauxois, ENS Lyon (France)
- S. Flach, MPIPKS Dresden (Germany)
- V. Gritsev, Univ. of Fribourg (Switzerland)
- Y.S. Kivshar, Australian Nat. Univ., Canberra
- T.B. Liverpool, University of Bristol (UK)
- R. MacKay, University of Warwick (UK)
- S. Moukouri, Uni. of Michigan, Ann Arbor (USA)
- M. Müller, ICTP, Trieste (Italy)
- M. Peyrard, ENS Lyon (France)
- R. Ramaswamy, JNU New Delhi (India)
- A. Rosso, LPTMS Orsay (France)
- S. Ruffo, University of Firenze (Italy)

INVITED SPEAKERS include:

- I.V. Barashenkov, Univ. of Cape Town (S. Africa)
- S.A. Campbell, Univ. of Waterloo (Canada)
- H.A. Cerdeira, UNESP, Sao Paulo (Brazil)
- R. Khomeriki, Javakhishvili Tbilisi Uni. (Georgia)
- S. Luzzato, ICTP, Trieste (Italy)
- P. Tchofo-Dinda, Univ. of Bourgogne (France)

DEADLINE

for requesting participation:
26 June 2011