



The Abdus Salam  
International Centre for Theoretical Physics



**International School on Non-linear Dynamics in Complex Systems**  
**31 October - 11 November 2011**  
**Yaoundé, Cameroon**

*held at Yaoundé University I, Amphitheater of Department of Physics (new building)*

co-sponsored by:

Agence Universitaire de la Francophonie, Yaoundé  
Association pour la Promotion Scientifique de l'Afrique, Paris  
Centre International de Mathématiques Pures et Appliquées, Nice  
École Normale Supérieure de Lyon  
European Physical Society, Mulhouse  
International Union of Pure and Applied Physics, London

**PRELIMINARY PROGRAMME** (as of 1st Nov.)

Monday, 31 October

8:00 - 9:30	REGISTRATION (outside Lecture Hall A700)
9:30 - 10:00	OPENING CEREMONY (outside Lecture Hall A700)
10:00 - 11:00	<b>T. Dauxois</b> Introduction to non-linear dynamics - I
11:00 - 11:30	Coffee Break
11:30 - 12:30	<b>M. Müller</b> Anderson localization and many-particle localization - I
12:30 - 14:00	LUNCH BREAK
14:00 - 15:30	<b>T. Dauxois</b> Introduction to non-linear dynamics - II
15:30 - 16:00	Coffee Break
16:00 - 16:45	<b>T.C. Kofane</b> Non-linear dynamics research in Yaounde
17:45 - 19:00	Welcome drink

Tuesday, 1 November

- 9:00 - 10:00      **M. Müller**  
Anderson localization and many-particle localization - II
- 10:00 - 11:00      **S. Flach**  
Breathers I: Discrete breathers
- 11:00 - 11:30      Coffee Break
- 11:30 - 12:30      **S. Luzzatto**  
Introduction to Ergodic Theory - I
- 12:30 - 14:00      LUNCH BREAK
- 14:00 - 15:30      **T. Dauxois**  
Introduction to non-linear dynamics - III
- 15:30 - 16:00      Coffee Break
- 16:00 - 16:30      Contributed talk by **E.J. Torres-Herrera**  
Anomalous Anderson localization in metamaterials
- 16:30 –              POSTER SESSION

Wednesday, 2 November

- 9:00 - 10:00      **S. Flach**  
Breathers II: Q\_breathers
- 10:00 - 11:00      **T. Dauxois**  
Tutorial: Introduction to non -linear dynamics
- 11:00 - 11:30      Coffee Break
- 11:30 - 12:30      **V. Gritsev**  
Non-linear quantum dynamics - I
- 12:30 - 14:00      LUNCH BREAK

(cont.)

(cont. Wed. 2 Nov.)

- 14:00 - 14:45      **J.-P. Nguenang**  
Quantum Q-breathers in optical lattices with two particles
- 14:45 - 15:30      **R. Khomeriki**  
Optical analogy of quantum particles interaction in a lattice
- 15:30 - 16:00      Coffee Break
- 16:00 - 17:30      **M. Müller**  
Anderson localization and many-particle localization - III
- 17:30 - 19:00      **T. Blowers**  
English for scientists - I

Thursday, 3 November

- 9:00 - 10:00      **T. Dauxois**  
Introduction to non-linear dynamics - V
- 10:00 - 11:00      **M. Müller**  
Anderson localization and many-particle localization - IV
- 11:00 - 11:30      Coffee Break
- 11:30 - 12:30      **V. Gritsev**  
Non-linear quantum dynamics - II
- 12:30 - 14:00      LUNCH BREAK
- 14:00 - 15:30      **S. Flach**  
Tutorial: Breathers III - Quantum Beathers
- 15:30 - 16:00      Coffee Break
- 16:00 - 16:30      Contributed talk by **E.B. Megam Nguonkadi**  
Dynamics and synchronization of an electronic system constitute of a  
Duffing-Holmes oscillator coupled to a Van der Pol one

Friday, 4 November

9:00 - 10:00	<b>V. Gritsev</b> Non-linear quantum dynamics - III
10:00 - 11:00	<b>S. Flach</b> The weak password problem: Chaos, criticality , and p-captchas
11:00 - 11:30	Coffee Break
11:30 - 12:30	<b>T. Dauxois</b> Introduction to non -linear dynamics - VI
12:30 - 14:00	LUNCH BREAK
14:00 - 15:30	<b>V. Gritsev</b> Non-linear quantum dynamics - IV
15:30 - 16:00	Coffee break
16:00 - 16:45	<b>S. Luzzatto</b> Introduction to Ergodic Theory - II
16:45 - 18:15	<b>T. Blowers</b> English for scientists - II

Monday, 7 November

9:00 - 10:00	<b>R.S. MacKay</b> Robustness and synchronization of non-autonomous oscillators - I
10:00 - 11:00	<b>Y. Kivshar</b> Non-linear optics - I
11:00 - 11:30	Coffee Break
11:30 - 12:30	<b>R.S. MacKay</b> Robustness and synchronization of non-autonomous oscillators - II
12:30 - 14:00	LUNCH BREAK

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*(cont. Mon. 7 Nov.)*

- 14:00 - 14:45      **M. Marsili**  
Non-linear dynamics in modeling financial markets.
- 14:45 - 15:30      **H.A. Cerdeira**  
Predicting crises
- 15:30 - 16:00      Coffee Break
- 16:00 - 16:30      Contributed talk by **G. Djudje Kenmoe**  
Role of substrate geometry in stick-slip phenomena
- 16:30 - 17:00      Contributed talk by **P.H. Louodop Fotso**  
Synchronization of uncertain multi-delayed Diode-modified Chua's  
oscillators using a combination of bounded nonlinear and sliding mode  
couplings
- 17:00 –              Get together

Tuesday, 8 November

- 9:00 - 10:00      **A. Rosso**  
Non-linear dynamics in classical disordered systems - I
- 10:00 - 11:00      **Y. Kivshar**  
Non-linear optics - II
- 11:00 - 11:30      Coffee Break
- 11:30 - 12:30      **R. Ramaswamy**  
Non-linear dynamics and synchronization in biological systems - I
- 12:30 - 14:00      LUNCH BREAK
- 14:00 - 15:30      **R.S. MacKay**  
Robustness and synchronization of non-autonomous oscillators - III

Wednesday, 9 November

- 9:00 - 10:00      **R. Ramaswamy**  
Non-linear dynamics and synchronization in biological systems - II
- 10:00 - 11:00      **T. Liverpool**  
Polymers and active media - I
- 11:00 - 11:30      Coffee Break
- 11:30 - 12:30      **A. Rosso**  
Non-linear dynamics in classical disordered systems - II
- 12:30 - 14:00      LUNCH BREAK
- 14:00 - 15:30      **Y. Kivshar**  
Non-linear optics - III

Thursday, 10 November

- 9:00 - 10:00      **R.S. MacKay**  
Robustness and synchronization of non-autonomous oscillators - IV
- 10:00 - 11:00      **T. Liverpool**  
Polymers and active media - II
- 11:00 - 11:30      Coffee Break
- 11:30 - 12:30      **A. Rosso**  
Non-linear dynamics in classical disordered systems - III
- 12:30 - 14:00      LUNCH BREAK
- 14:00 - 15:30      **R. Ramaswamy**  
Non-linear dynamics and synchronization in biological systems - III
- 15:30 - 16:00      Coffee Break
- 16:00 - 17:30      **A. Rosso**  
Non-linear dynamics in classical disordered systems - IV

Friday, 11 November

9:00 - 10:00	<b>T. Liverpool</b> Polymers and active media - III
10:00 - 11:00	<b>Y. Kivshar</b> Non-linear optics - IV
11:00 - 11:30	Coffee Break
11:30 - 12:30	<b>R. Ramaswamy</b> Non-linear dynamics and synchronization in biological systems - IV
12:30 - 14:00	LUNCH BREAK
14:00 - 15:30	<b>T. Liverpool</b> Polymers and active media - IV
15:30 -	CLOSING REMARKS