

## **FQXI Workshop. June 1 to June 3, 2016.**

June 1 and 2 Faculté des Sciences – Campus de Saint Charles  
– Aix-Marseille Université

June 3 Ecole Centrale de Marseille.

**Organised in the framework of the FQXI Project**

## **Quantum Rogue Waves as Emerging Quantum Events**

[http://fqxi.org/grants/large/awardees/view/\\_details/2015/durt](http://fqxi.org/grants/large/awardees/view/_details/2015/durt)

**Organisator : Thomas Durt (Institut Fresnel-Ecole Centrale de Marseille)**

**Co-organisator : Ralph Willox (The Tokio University).**

## **PROGRAM.**

**WEDNESDAY, JUNE 01, 2016, afternoon**

**Joint (COST-NQO-WG3)---FQXI workshop.**

Co-organised by

FQXI and COST action 1403 **NANO QUANTUM OPTICS** <http://www.cost-nqo.eu/>

<http://www.cost-nqo.eu/event/nqo-joint-wg2-and-wg3-workshop/>

14:00 – 14:30: Thomas Durt (Institut Fresnel-Ecole Centrale de Marseille) Marseille, Quantum coherence at the nano and mesoscale, and non-linear modifications of Schroedinger equation.

14:30 – 15:00: Mohamed E. Yahia, International University of Srajevo (IUS), Rogue waves lead to the instability in GaN semiconductors.

15:00 – 15:30: Coffee break

15:30 – 16:00 : Stephane Barland, INLN, Nice, France, Particle-like behavior of light in semiconductor lasers.

16:00 – 16:30 TBA.

WEDNESDAY, JUNE 01, 2016, Evening.

17.00-18.00

## Talk Grand Public FQXI.

Emmanuel Fort Institut Langevin Paris.

Dualité onde-corpuscule à l'oeil nu.

18.00-19.00 : Social event: cocktail, together with participants to parallel workshops (GDR ONDES, COST 1403 workshop and LIA ALPhFA)

## PROGRAM

THURSDAY, JUNE 02, 2016

### **Solitons versus rogue waves : mathematical aspects.**

9:00 – 9:30: Ralph Willox The Tokio University, Japan TBA.

9:30 – 10:00: Vladimir Matveev Institut de Mathematiques de Bourgogne, Universite de Bourgogne, France. TBA.

10:00 – 10:30: Coffee Break

### **Non-linear generalisations of Schroedinger equations: applied aspects.**

10.30 – 11.00: Saliya Coulibaly PHLAM Universite de Lille,  
Spatio-temporal chaos and extreme events in optical dissipative systems

11.00 – 11.30: Mario Gattobigio, INLN Universite de Nice TBA (about NLS equation as an effective description of cold atoms phenomenology)

11.30 – 12.00: Discussion.

12.00– 14:00 Lunch

### **Afternoon session: connections with de Broglie-Bohm dynamics.**

14:00 – 14:30: Aurelien Drezet Institut Neel Grenoble TBA (about de Broglie-Bohm causal interpretation of the quantum theory).

14.30-15.00 : Thomas Durt Institut Fresnel Ecole Centrale de Marseille  
Non-linear modifications of Schroedinger equation and de Broglie' s double solution program.

15.00-15.30 Jacques Robert LAC Universite de Paris-Sud

The de Broglie wave : a particular view

15:30 – 16:00 : Christos Efthymiopoulos academy of Athens TBA (about the onset of equilibrium in dB-B dynamics).

16:00 – 16:30 Coffee break

16:30 – 17:00: Daniel Fargue Ecole des Mines, Fondation de Broglie-Paris  
La théorie de la double solution de L. de Broglie, théorie inachevée, problèmes en suspens, impasse ou voie d'avenir?

17.00-17.30 : Discussion+ elaboration of Thursday program..

## PROGRAM

FRIDAY, JUNE 03, 2016

!!! LOCATION: ECOLE CENTRALE DE MARSEILLE !!!

### **Non-locality versus non-linearity in quantum and classical mechanics.**

9:30 – 10:00: Ralph Wilcox The Tokio University, Japan TBA.

10.00 – 10:30: Thomas Durt Institut Fresnel Ecole Centrale de Marseille

10.00-10.30 : Coffee Break

Rest of the day :

-round tables.

-discussions.

-free interventions,

Exact program to be decided and elaborated by the participants, Thursday evening.