



PAP Seminar Announcement

Seminar on

Towards Light Bullets in Vertical-Cavity Surface-Emitting Lasers

By

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Date: 20 March 2013, Thursday
Time: 14.00 to 15.00
Venue: Hilbert Space (SPMS-PAP-02-02)
Host: Assoc. Prof. Sun Handong

Introduction

Spatio-temporal solitons, also called "light-bullets" (LB) have been actively sought in the last 20 years. Despite the efforts made, only fading spatio-temporal light pulses were experimentally observed in a waveguide array. At INLN we propose an alternative approach to LB based on self-organisation of dissipative systems. While in waveguides LB existence and stability rely heavily on sensitive balance of non-linearities and on specific characteristics of the seeding pulses, three dimensions localized states of light may exist in dissipative systems as stable solutions (attractors) towards which the system would spontaneously evolve. In order to reach three dimensional localization of light we build on the results achieved on spatial localization (Cavity Solitons Laser) and time localization (Mode-locked Laser). The results we have obtained so far will be presented.

Biography



Prof. Massimo Giudici was born in 1969 in Italy, he received Italian "Laurea in Fisica" in 1995. After one year experience in a laser manufacturing company "Pirelli Cavi-Milano", he joined Institut Non Linéaire de Nice in order to accomplish a Ph.D. thesis at "Université de Nice Sophia Antipolis" on "Non Linear Dynamics in Semiconductor Lasers with Optical feedback". He obtained his Ph.D. in 1999. After one year post-doc at IMEDEA in Spain where he investigated the role of noise in excitable optical systems, he came back to INLN as "Associate Researcher". Since 2001 he is a teaching researcher at "Université de Nice-Sophia Antipolis". His research interest revolves around the generation and control of localised structures in optical systems and around semiconductor laser dynamics. In 2010 he has obtained the degree of full professor. He is associate editor of IEEE Photonics Journal. He is author of around 50 publications in refereed scientific journals .

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