



CEA - Saclay 91191 Gif-sur-yvette Cedex
Service de Physique de l'Etat Condensé - UMR 3680

SÉMINAIRE

Mercredi 21 Janvier 2015 à 11h15

Orme des Merisiers SPEC, Salle Itzykson, Bât.774

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Nonlinear and quantum dynamics of Kerr frequency combs

Kerr optical frequency combs originate from the excitation of the whispering gallery mode of high Q monolithic resonators through the Kerr effect. In this presentation, we present the various models (spectro- and spatio-temporal) used to describe the nonlinear dynamics of these combs, which can feature structures such as bright and dark solitons, Turing rolls, or spatiotemporal chaos. We present a quantum formalism that allows to understand the phenomena of quantum correlations and squeezing in this system. We also discuss the relevance of this research for various applications such as time-frequency metrology, molecular spectroscopy, and ultra-low phase noise microwave generation.

A coffee break will be served at 11h00. The seminar will be given in English.
