

## SEMPARIS – Séminaires en région parisienne

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### Seminares du LPTM , Universite de Cergy Pontoise

**Jeudi 8 Fevrier 2018, 14 :00**

LPTM, 4.13 St Martin II

Domaines : physics.optics

Titre : *Quantum simulating many-body phenomena with propagating light*

Orateur : **Pierre Elie Larre ( LPTM UCP Cergy Pontoise )**

Résumé : *We consider the propagation of a quantum light field in a cavityless nonlinear medium. In this all-optical platform, the space propagation of the field's envelope may be mapped onto the time evolution of a quantum fluid of interacting photons. The resulting many-body quantum system constitutes a particular class of quantum fluids of light and presently attracts a growing interest as a powerful tool for quantum simulation. I will present recent theoretical and experimental progresses in this rapidly emerging research field, including investigations on superfluidity, elementary excitations, disorder, quantum quenches, prethermalization, thermalization, and Bose-Einstein condensation.*

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