



NEQFLUIDS2016 : Classical and Quantum Fluids Out of Equilibrium

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Driven-dissipative and conservative dynamics in non-equilibrium fluids of light

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In this talk I will give an overview of recent works on quantum fluids of light in different platforms. I will first focus on cavity set-ups where Bose-Einstein condensation arises as a non-equilibrium phase transition and I will discuss how an effective thermal state may appear such a driven-dissipative context and how thermalization can be experimentally probed. In the second part of the talk, I will review the latest advances in the theory of quantum fluids of light in cavity-less bulk nonlinear media, where the propagation dynamics can be recast in terms of a conservative evolution. The novel quantum effects that occur in this regime will be highlighted, as well as the promising perspectives in the direction of studies of non-equilibrium quantum statistical mechanics and quantum dynamics past quantum quenches.