

I. Carusotto: *Quantum fluids of light under synthetic gauge fields*

Following impressive recent experimental advances, quantum fluids of interacting photons in nonlinear optical media nowadays appear as promising candidates for studies of many-body physics in novel regimes, e.g. in the presence of synthetic gauge fields for photons. In this talk, after a short review of the general idea of quantum fluids of light, I will present the on-going theoretical activity of the Trento group on quantum Hall effects in optical systems.