Speaker: Valera Kozin

Title: Chiral Waveguide Optomechanics: First Order Quantum Phase Transitions with $Z_3$ Symmetry Breaking.

Place: Zoom (information below)

Abstract:

We present a direct mapping between the quantum optomechanical problem of the atoms harmonically trapped in the vicinity of a chiral waveguide and a generalized quantum Rabi model, and we discuss the analogy between the self-organization of atomic chains in photonic structures and Dicke-like quantum phase transitions in the ultrastrong coupling regime. We extend the class of the superradiant phase transitions for the systems possessing $Z_3$ rather than parity $Z_2$ symmetry and demonstrate the emergence of the multicomponent Schrödinger-cat ground states in these systems.

https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.125.263606

https://uni-freiburg.zoom.us/j/68109251419?pwd=b2xyRE12OTNCemFoOVp1QkxadjJRdz09

Meeting ID: 681 0925 1419
Passcode: xb9t58FCB