



Cold atom quantum simulations and thermalisation physics of synthetic quantum matter: importance ranging from condensed matter to quantum gravity

You are cordially invited to the talk by



Dr. Soumik Bandyopadhyay

Quantum Technologies Theory Group
Pitaevskii BEC Center, University of Trento, Italy

Cold atom quantum simulation of strongly correlated matter represents a frontier of modern physics, with broad multidisciplinary relevance across AMO physics, quantum information, condensed matter, high-energy physics, and even quantum gravity. In this talk, we shall explore how cold atom systems can simulate complex synthetic quantum matter, including quantum criticality in condensed matter, up to the physics of black holes. We shall examine the equilibrium and dynamical properties of these systems under both closed and open quantum system settings. Our investigations combine classical simulations (high-performance computing), quantum simulations, and analytical methodologies to reveal unexplored terrain in strongly correlated quantum systems.



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Interdisciplinary Block (D1)



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at 2.30 pm

Dr. Bandyopadhyay is available in the campus on Thursday and Friday for interactions with students and faculty members.