Session 4: Numerics for Quantum simulators

Speaker: Spyros Sotiriadis

Affiliation: Dahlem Center for Complex Quantum Systems

Title: Hamiltonian truncation methods for the study of continuous quantum field dynamics

Abstract: One of the greatest recent achievements of theoretical physics is the classical simulation of quantum many-body systems and of their dynamics. However, this task remains highly challenging for continuous models of quantum fields which are of strong significance for a wide range of applications from particle and black hole physics to condensed matter and ultra-cold atoms. I will present recent numerical results on Quantum Field Theory dynamics based on the Hamiltonian truncation method and applications to experiments that can play the role of analog quantum field simulators.