

11/6/2024 - Reyhaneh Khaseh (Augsburg)

## "Active quantum flocks"

**ABSTRACT:** In the captivating overlap of quantum physics and biophysics, our research seeks to reveal how characteristics intrinsic to living systems can manifest within quantum matter. Flocks of animals in the macroscopic classical world are iconic representations of collective behavior, where constituents move in harmony as though a singular entity. The intriguing intersection between quantum physics and biophysics prompts the exploration of whether such flocks can manifest in the microscopic quantum realm. Introducing the concept of active quantum matter through a series of models on a one-dimensional lattice, we present analytical and numerical evidence pointing to the emergence of quantum flocks.

**Short Bio of the speaker:** I did my Bachelor's and Master's in Iran; for PhD, I was at ICTP(Trieste, Italy). I defend my PhD under the supervision of Prof. Rosario Fazio. From August 2020 until now, I have been a postdoc working with Prof. Markus Heyl(University of Augsburg). My research is mainly focused on Non-equilibrium dynamics of quantum systems.