

# Theory Colloquium

Farokh Mivehvar, Institute For Theoretical Physics, University of Innsbruck

“Self-ordering (and superradiance) in cavity quantum-electrodynamics”

## Abstract

Self-ordering -- the spontaneous emergence of order out of disorder and chaos under some critical conditions -- is a ubiquitous phenomenon not only in physics, but also in chemistry, biology, social sciences, and many other fields. The most well-known example in physics is the crystallization process, while the other commonly known examples are the collective bird flocking and fish schooling. In this talk, I will discuss the basic physics of self-ordering in open atom-cavity quantum systems. In these systems, self-ordering is normally accompanied by so-called superradiance, which I will also explain. In the end, I will present some of our new predictions for self-ordering in atom-cavity systems [1].

1. arXiv:2404.10131 (<https://arxiv.org/abs/2404.10131>).

Wednesday | 22.01.2025 | 5:00pm

SR 1 | ICT building