



Colloquium

Non-reciprocal Active Matter

Ramin Golestanian

Max Planck Institute for Dynamics and Self-Organization

Host: Andela Saric

Non-reciprocal interactions (NRIs) are quite natural among higher organisms including humans, as we all know that the way two humans act towards each other does not derive from a mutual translationally symmetric “interaction potential” that gives rise to action=reaction. It is, however, a remarkably surprising that NRIs can exist at the microscopic scale among brain-less particles, in particular enzymes, when they are catalytically or metabolically active, i.e. under non-equilibrium conditions. In this Colloquium, I will introduce the topic and discuss some of its non-trivial consequences, following the developments in the field over the last decade. In particular, we discuss how non-reciprocal active matter can provide a paradigm within which we can understand how it may have been possible to form self-organized metabolic cycles at the early stages of life formation in a fast and robust manner.

Monday, March 2, 2026 11:30am - 12:30pm

Raiffeisen Lecture Hall



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: <https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.