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OBERSEMINAR IM INSTITUT FÜR ANGEWANDTE ANALYSIS

Wintersemester 2025/26

Im Rahmen des Oberseminars spricht am Montag, den **13. Oktober 2025**:

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Non-equilibrium chemical systems

The detailed balance is a property of macroscopic systems that are obtained from an underlying time-reversible microscopic model. It states that each elementary process (for instance, each chemical reaction) is in equilibrium with its reverse process. Even if, at the microscopic level, we expect chemical reactions to satisfy the so-called detailed balance condition, biochemical systems are often modeled by systems of equations for which detailed balance fails. This can be justified if the system is in contact with "reservoirs" that are out of equilibrium, as it is usually the case in biological systems. In this talk I will discuss the relation between the detailed balance property and two important properties of certain chemical systems. The first property that I will discuss is the capability of discrimination between different ligands of a stochastic version of the classical Hopfield-Ninio kinetic proofreading network. The second property that we will study is the adaptation property (i.e. the fact that some chemical networks respond to gradients instead of absolute values of signals).

Der Vortrag findet in **Raum E.60, Helmholtzstr. 18** statt.

Beginn: 16 Uhr (c.t.). Alle Interessierten sind herzlich eingeladen.

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