Institut für Physik

Theoriekolloquium

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Am **16. April 2015** um **14.15 Uhr** in **W2 1-143** hält

Herr Dr. B. Altaner (Göttingen)

einen Vortrag mit dem Titel

Asymptotic statistics of fluctuating currents in Stochastic Thermodynamics

Small systems in thermodynamic environments are strongly affected by thermal noise. Recently, novel experimental techniques and large-scale computer simulations have enabled the study of the molecular machinery of living cells. Molecular motors provide an archetypal example for a small system far from equilibrium, where fluctuations cannot be neglected and can be even functional. Stochastic Thermodynamics uses Markovian jump processes to model the random transitions between observable mesoscopic states. Physical currents are described by anti-symmetric observables on the edges of the graph representing the network of states.

In this talk, we present a method for the analytical calculation of the full fluctuation spectrum of any physical current. In particular, this provides an easy algorithm for the calculation of the drift and diffusion constant. Further, our method can be used to compare the predictions of models formulated at different resolutions.

We demonstrate the power of our general method by discussing a model for the molecular motor protein kinesin, thus uncovering previously hidden structure in kinesin's phase diagram.

Interessierte sind herzlich eingeladen.

gez. Prof. Dr. Andreas Engel