

Theoriekolloquium

Am **28. Mai 2015** um **14.15 Uhr** in **W2 1-143** hält

Herr Dr. A. Baule (London)

einen Vortrag mit dem Titel

Path-integral approach for the weak noise limit of systems driven by non-Gaussian noise

A fundamental understanding of the dynamics of systems under the influence of thermal fluctuations is provided by investigating the large deviation properties in the limit of weak noise strength. This approach has provided, for example, theories of activated escape in low temperature regimes and is also intimately linked to the description of quantum mechanical systems within a semiclassical approximation. However, many complex systems are driven by non-thermal (active) fluctuations with non-Gaussian characteristics.

Using a path-integral approach we investigate the weak-noise limit of such systems for a general class of non-Gaussian fluctuations. We define a scaling limit that identifies the optimal paths of the dynamics as minima of a stochastic action, while retaining the infinite hierarchy of noise cumulants. We apply this approach to the paradigmatic problem of noise-induced escape from a metastable potential. Exact results for the large deviation asymptotics of Kramer's escape rate and the optimal escape paths are obtained.

Interessierte sind herzlich eingeladen.

gez. Prof. Dr. Andreas Engel