



AKTUELLE PROBLEME DER NICHTLINEAREN DYNAMIK

Lehrstuhlseminar Komplexe Systeme und Nichtlineare Dynamik

Mittwoch, den 18.01.2012, 11:00 Uhr

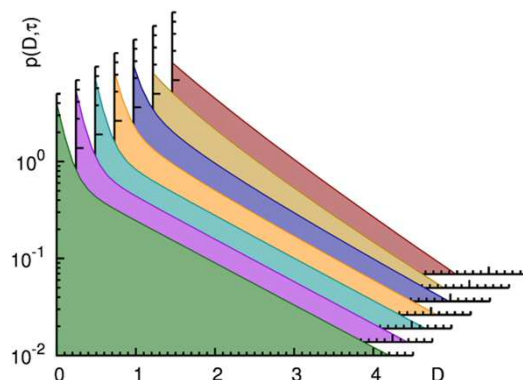
Reichenhainer Str. 70; Physikgebäude, Raum: 2/P033

Michael Bauer, M.Sc.

TU Chemnitz

Characterizing heterogeneous diffusion with the distribution of diffusivities

Heterogeneous diffusion processes, where the diffusive behavior changes during the motion, demand advanced approaches to determine the transport properties. For single-particle tracking (SPT) we propose the analysis based on the distribution of diffusivities. In this talk, different heterogeneous diffusion processes are characterized with this new method in order to assess the experimentally relevant parameters of the systems. We illustrate the advantages over conventional methods such as mean-squared displacements which conceal the effects of inhomogeneities. Moreover, we show first results from applying the method to experimental data which indicate that further investigations are necessary to improve the analysis. Besides, the relation to ensemble-based methods such as pulsed field gradient nuclear magnetic resonance (PFG NMR) is presented, which may enable an investigation of the ergodicity of such systems.



Interessenten sind herzlich eingeladen.