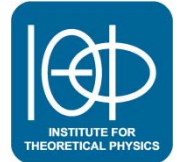




TECHNISCHE UNIVERSITÄT WIEN
INSTITUT FÜR THEORETISCHE PHYSIK
WIEDNER HAUPTSTRASSE 8-10, 1040 WIEN



Invitation

Institute for Theoretical Physics – TU Wien

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Transport beyond Brownian motion - Anomalous, slow complex dynamics and persistent correlations

Abstract:

Brownian motion constitutes one of the pillars of transport phenomena and its theoretical foundation was pioneered by Einstein and Smoluchowski more than 100 years ago in terms of a molecular kinetic interpretation. However, even in this simplest case, where a single colloidal particle diffuses in solution, hidden persistent correlations beyond Einstein's description are present due to hydrodynamic memory, concomitantly the spectrum of the associated random forces becomes colored. Such long-lived correlations in fact exist in virtually all strongly interacting systems, in particular, they lead to a non-analytic frequency-dependence of the transport coefficients. Here we discuss complex transport in Brownian motion of a single particle in optical trapping, the emergence of anomalous transport for tracers exploring a porous or crowded environment, the micro-rheological response in systems driven far from equilibrium, as well as the glass transition of liquids in confinement.

Date:

Monday, **2.5.2016**, 16:00

Venue:

SEM DB yellow 03
Institute for Theoretical Physics – TU Wien
Wiedner Hauptstrasse 8 – 10, yellow area, 3rd floor