Eugene Wigner Colloquium

joint event of GRK 1558 and SFB 910

Matthias Krüger

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"Classical fluctuation forces out of equilibrium"

Fluctuations of a medium lead to interactions between embedded objects. Such interactions, first predicted for the (quantum) electromagnetic field by Hendrik Casimir more than 60 years ago, have in recent years attracted considerable attention in a variety of systems, including also classical fluctuations in soft matter. For systems out of equilibrium, such forces can be much richer in phenomenology compared to equilibrium analogues. In this talk, focusing on classical systems, we demonstrate how forces out of equilibrium depend on dynamical conservation laws, and that forces can be present even if absent in equilibrium. This is done using a general coarse grained description which yields analytical expressions for the forces.

S. Klapp

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