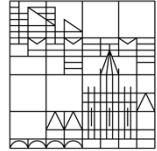


# Physikalisches Kolloquium

Universität  
Konstanz



Di 05.02.19  
15:15 Uhr  
14:45 Uhr, Kaffee/Tee  
R 513



**Prof. Dr. Stefan U. Egelhaaf**  
Universität Düsseldorf

## Dynamics of colloids in external potentials

A colloidal particle dispersed in a liquid undergoes a random motion. This motion is significantly changed if, e.g., the particle concentration is increased or an external potential is imposed. We experimentally create different potential energy landscapes using extended laser light fields, ranging from periodic patterns (laser fringes) to random patterns (speckle patterns). The dynamics of colloidal particles in these potential energy landscapes are followed by video microscopy and quantitatively analysed. Diffusive as well as sub- and super-diffusive behaviour can be observed with the extent of the different regimes depending on the specific situation, such as the shape and modulation amplitude of the external potential but also the particle concentration and the composition of particle mixtures. We will review our findings from different experimental conditions and compare the experimentally observed behaviour to simulation and theoretical results.

