

IRTG-Seminar



Dr. Johannes von Vangerow

Albert-Ludwigs-Universität Freiburg

“Femtosecond time-resolved photoion and photoelectron imaging spectroscopy of doped helium nanodroplets”

This presentation addresses the dynamics of metal atoms attached to quantumfluid He nanodroplets following photo-initiated electronic excitation and ionization. In particular, the focus lies on resolving occurring phenomena in the time domain.

By pump-probe resonance enhanced multiphoton ionization schemes with either nanosecond or femtosecond time resolution and velocity map imaging detection of charged photofragments, the real-time excited state dynamics can be followed on a high level of detail. In combination with simulations based on time dependent density functional theory, the complex response of the superfluid He environment can be efficiently traced back.

By these studies, a detailed understanding of guest-host interaction between the finite-sized cold He droplet and the spectroscopic sample is established. These findings are of relevance for both the understanding of many-body quantum phenomena and the controlled study of chemical reaction dynamics in the cold liquid He environment.

Tuesday, October 24, 2017, 6:00 p.m., HS II

Physics high rise, Hermann-Herder-Str. 3