

## EINLADUNG

### SFB/TR49 Special Seminar - FRANKFURT/MAIN -

**Donnerstag  
01. Februar 2018  
14:00 Uhr**

Physikgebäude  
Goethe-Universität  
Max-von-Laue-Str.1  
Phys 01.101

**Dr. Michael Pasek**  
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### ***“Recent results on dilute ultracold atomic gases in disordered potentials”***

Three experiments [1-3] have claimed the observation of Anderson localization of ultracold atoms in 3D disordered potentials.

However, the critical line separating the localized and ergodic phases was observed to be significantly higher than the current best theoretical and numerical predictions.

I will show recent theoretical results that try to shed some light on this matter, in particular regarding the effect of the local probability distribution and long-range spatial correlations of the disordered potential.

I will also discuss recent experimental results on the direct measurement of spectral functions of ultracold atoms in disordered potentials.

#### **References**

- [1] S. S. Kondov, et al., Three-dimensional Anderson localization of ultracold matter, Science 334, 66 (2011).
- [2] F. Jendrzejewski, et al., Three-dimensional localization of ultracold atoms in an optical disordered potential, Nat. Phys. 8, 398 (2012).
- [3] G. Semeghini, et al., Measurement of the mobility edge for 3D Anderson localization, Nat. Phys. 11, 554 (2015).

