

**Arnold-Sommerfeld Center for Theoretical Physics  
Chair for Theoretical Nanophysics  
Priv.-Doz. Dr. Fabian Heidrich-Meisner**

**Sept. 22, 2015**

**Topic of the Master thesis in Physics: Many-body localization**

Many-body localization is the insulating behavior resulting from disorder and interactions between electrons in condensed matter physics. This phase is the generic extension of the famous Anderson insulators. We are looking for a student interested in working on a very timely and dynamic topic using numerical methods (exact diagonalization) and elementary analytical approaches. The goals are the characterization of the many-body localization transition in one-dimensional systems and the development of an improved qualitative understanding of the many-body localized phase and its unusual properties.

Begin: Winter term 2015/16 or as soon as possible

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