



SFB/TRR 21 - Colloquium

29. Juli 2011, Stuttgart

## **Dominik Schneble**

(Stony Brook University, Stony Brook, NY, USA)

### **Exploring Atomic Mixtures in Optical Lattices**

Quantum gases in optical lattices allow for fundamental studies in atomic and condensed-matter physics, including strongly-correlated many-body systems. My talk will focus on possibilities with atomic mixtures (derived from a Bose-Einstein condensate) in lattices whose depth can be independently controlled for each component. In recent experiments, we have explored novel features arising from interactions in the mixture: collinear atomic four-wave mixing, polaronic shifts and disorder effects in the strongly correlated regime, and matter-wave diffraction from crystalline atomic structures.

**29. Juli 2011, 14:00 Uhr**

**Universität Stuttgart, NWZII, Raum 2.136  
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