

Invitation to IQST Seminar

on Tuesday, January 16, 2018, **2pm**
University of Stuttgart, NWZII
Pfaffenwaldring 57
Room 2.136



Prof. Dr. Benjamin Lev
Departments of Physics and Applied Physics, Stanford University

Title: Many-body cavity QED with multimode resonators

Abstract: We will present our first experiments involving multimode cavity QED, wherein the cavity-mediated atom-atom interaction is dramatically modified compared to that in a single-mode cavity. We will report on measurements that demonstrate that strong, tunable-range photon-mediated interactions can be engineered between atoms and spins in such a cavity. These results pave the way for future experimental access to nontrivial phase transitions in driven-dissipative quantum systems, synthetic dynamical gauge fields, and the ability to study novel non-equilibrium spin glasses and quantum neuromorphic computation.

Host: Prof. Dr. Tilman Pfau, 5. Phys. Institut; University of Stuttgart