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# Einladung

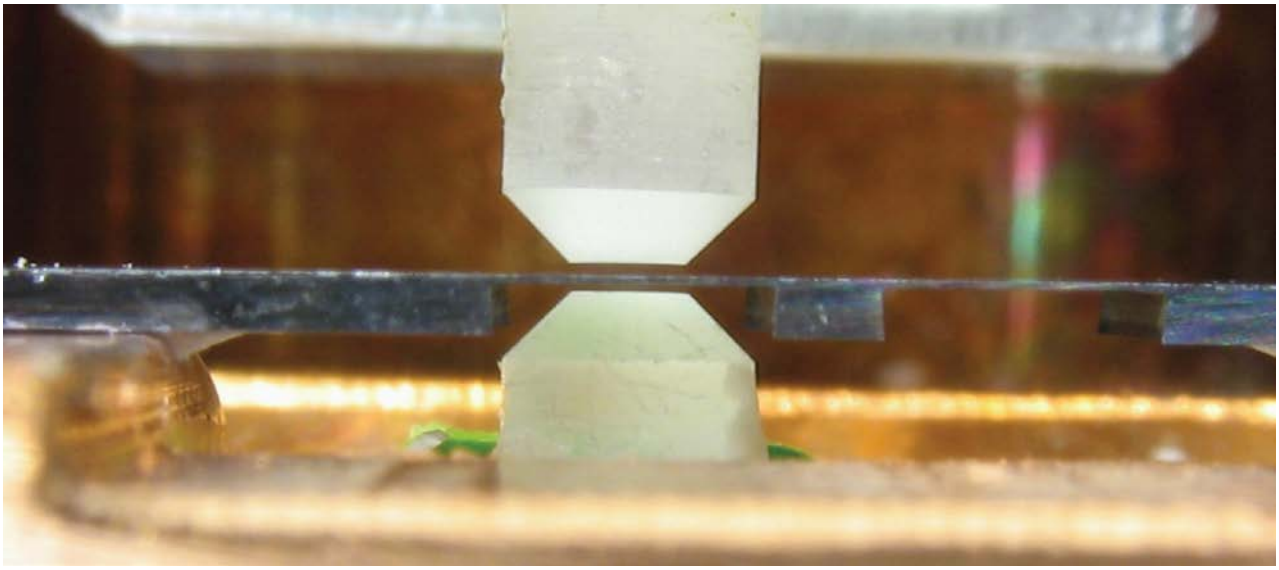
**zum**

**Physikalischen Kolloquium**
**Montag, 23.04.2018**
**16:15 Uhr in N24/H13**

**Professor Dan Stamper-Kurn**
Department of Physics
University of California, Berkeley

**Detecting and coupling quantum objects with quantum light**

An assortment of quantum technologies are being developed, for purposes such as precise sensing, quantum information processing, and quantum simulation of complex systems, in which light is used to cause quantum objects to interact and to allow their properties to be measured. By combining techniques of ultracold atomic physics and quantum optics, we have developed a system in which both mechanical oscillators and also spin oscillators, both comprised of small batches of atoms trapped in vacuum, interact with the electromagnetic modes of a high-finesse optical cavity. I will describe the use of this system for realizing quantum-limited force detection, for cavity "cooling" of spin ensembles, and for exploring light-induced coupling between mechanical and spin oscillators.



Ab 16.00 Uhr Kaffee, Tee und Kekse vor dem Hörsaal H13
**Organisation:** **Prof. Dr. F. Jelezko, Tel. 23750**
**Host:** **Prof. Dr. W. Schleich, Tel. 23080, off.: 23081**