



universität
wien

Fakultät für Physik

Isotopenforschung und Kernphysik

E I N L A D U N G

zum

V E R A - S E M I N A R

von

Markus ASPELMEYER

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**Quantum-Opto-Mechanics.
Using quantum optics to put mechanics
back into quantum mechanics**

Quantum states of mechanical resonators promise access to a whole range of new experimental regimes: from unprecedented levels of force sensitivity to the generation of macroscopic quantum superpositions of massive objects containing up to 10^{20} atoms. With the advent of micro- and nanomechanical systems a broad range of interdisciplinary approaches has emerged during the last years to tackle these challenges. Quantum optics provides a unique toolbox to enter and control the quantum regime of mechanical systems. I will review the recent progress in the field and report our latest results in Vienna on laser cooling mechanical micromirrors and the prospect of generating optomechanical quantum entanglement, which is at the heart of Schrödinger's cat paradox.

Donnerstag, 27. November 2008, 16:30 Uhr

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Seminarraum von VERA**

R. Golser

W. Kutschera