Applied Physics & OSA

Optics Seminar

Entanglement and ground state cooling in optomechanical systems

Prof. David Vitali

Physics Department, University of Camerino, Italy

Abstract:

Cavity optomechanical systems, in which an optical cavity is coupled by radiation pressure to a vibrational degree of freedom, represent a new promising tool for the investigation of quantum effects at the mesoscopic and macroscopic level. We shall see how quantum states of a macroscopic mechanical oscillator can be generated in a robust way and how multipartite continuous variable entanglement can be generated and manipulated in these systems.

Brief Biography:

Professor Vitali received the PhD at Scuola Normale Superiore,Pisa Italy in 1994. Since 2001, he has been the Associate Professor of Physics of Matter at The University of Camerino. Also, he was a visiting professor at the Ecole Normale Superieure in Paris (2004-2005), at The University of Barcelona (2006), and at the University of Vienna (2004 and 2005). Professor Vitali has authored more than 100 papers in international journals. His current research interests are in the fields of quantum optics, and optical and atomic implementations of quantum information processing.

Friday, February 22nd, 2008.

3:00pm-4:00pm.

Keck 142

Refreshments will be available in the lecture hall at 2:45pm