

QUANTUM OPTICS SEMINAR



Title: Atoms, Molecules, and Microstructured Surfaces: New Methods of Optical Cooling

Speaker: Peter Horak
Optoelectronics Research Centre, University of Southampton, UK

Time: Wednesday, June 10 at 10:15

Place: Phys.Aud.

Abstract:

Optical cooling of atoms, ions, and a few molecular species is well established in free space, and has also been demonstrated for particles inside an optical resonator. Alternatively, it can be shown that a single mirror, or a microstructured surface, reflecting a laser beam back onto a scattering particle with some time delay can lead to similar cooling forces. I will discuss the physics behind this novel cooling mechanism and present predictions of friction and steady-state temperature obtained by a perturbative approach. Finally, I will present theoretical and numerical models to investigate optomechanical effects in generalised geometries.

Joan Marler

Coffee, tea and bread rolls will be served at 10.00