



Einladung zum Physikalischen Kolloquium

Montag, 8.12.2008
16.15 Uhr, H2 (O25)

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**„A Bose Condensate in an Optical Lattice:
cold atomic gases as solid state systems”**

Abstract:

An atomic-gas Bose-Einstein Condensate, placed in the periodic light-shift potential of an optical standing wave, exhibits many features that are similar to the familiar problem of electrons moving in the periodic potential of a solid-state crystal lattice. Among the differences are that the BEC represents a wavefunction whose coherence extends over the entire lattice, with what is essentially a single quasi momentum and that the lattice potential can be turned on and off or accelerated through space. Experiments that are not easily done with solids are often straightforward with optical lattices, sometimes with surprising results.