Physikalisches Institut
Fakultät für Mathematik und Physik
Albert-Ludwigs-Universität Freiburg

QE

Quantum Efficiency Seminar und Colloquium

GIOVANNI MODUGNO

LENS e Dipartimento di Fisica e Astronomia,
Università di Firenze

Conducting and insulating phases of disordered ultracold atoms

We employ atomic Bose-Einstein condensate to study the equilibrium quantum phases and the transport properties of matter-waves in disordered optical lattices, in one spatial dimension. In particular, we characterize for the first time the whole disorder-interaction phase diagram, where we get a strong evidence of the presence of a gapless, insulating Bose glass phase. We also investigate the transport properties on both short and long time scales, from which we get an insight on the excitations and on the localization properties of interacting waves in disorder.

Date: **Tuesday, January 29th, 2013 15:45**
Location: **Lecture Hall 1, Hermann-Herder-Str. 3, Freiburg**

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