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

Quantum Efficiency Seminar und Colloquium

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Physikalisches Institut
Universität Bonn

Measurement of the Quantum Phase in Bose-Einstein Condensates: Josephson Oscillations, Rabi Oscillations, Time Scales

Measuring the quantum mechanical phase may be seen as a prototype of a quantum measurement process. To measure the phase of a Bose Einstein condensate (BEC), it must be compared to, i.e., brought in contact with another BEC, which serves as the "measurement apparatus". This involves Josephson oscillations of the BECs, Rabi-type oscillations of the excitations above the condensates, as well as relaxation into a stationary final state. We discuss the surprisingly rich oscillation and relaxation dynamics of the measurement process involving up to three different time scales.

Date: **Tuesday, October 30th, 2012 15:45 pm**
Location: **Lecture Hall 1, Hermann-Herder-Str. 3, Freiburg**

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