

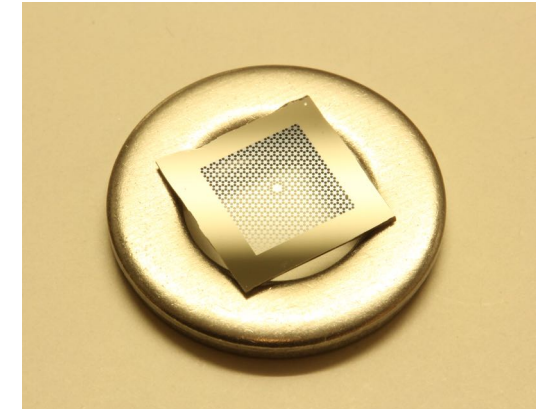
Freitag, 21. Oktober 2022, 15 Uhr c.t. im Hörsaal I des Physikalischen Instituts



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„Quantum physics with macroscopic objects“



Recent ideas and technological developments have made possible studies of macroscopic objects deep in the quantum regime. In the talk I will discuss experiments where an entangled Einstein-Podolsky-Rosen (EPR) state has been generated between distant mechanical and atomic oscillators. The concept of an oscillator with an effective negative mass crucial for those experiments will be presented. Progress towards application of those ideas to gravitational wave detectors following the proposal will be reported. Another challenge within quantum physics of macroscopic objects is generation of Fock states corresponding to single quantum excitations of an oscillator. Progress along those lines with Fock states of motion and of a collective atomic spin will be presented.