



Ron Folman

(Ben-Gurion University of the Negev)

Matter waves exposed to the external world: from decoherence to gravity and back

Matter-wave interferometry provides an excellent tool to investigate the effect of the environment on coherence. I will present several interferometry experiments done with a BEC on an atom chip and in which different effects of the environment have been investigated. First, I will discuss effects of fluctuations in the nearby environment probed with atoms trapped in a lattice very close to the surface. Then I will present the effect of gravity probed by clock interferometry, which connects to the interplay of QM and GR and “clock complementarity”.

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**Universität Ulm, Raum N24/252
Albert-Einstein-Allee 11, 89081 Ulm**

