



CRC 1227
Designed Quantum States of Matter



GUEST LECTURE

Prof. Mark Kasevich

Physics Department, Stanford University, US

(Guest of Prof. E. Rasel and Prof. K. Hammerer)

Leibniz Universität Hannover

DQ-mat Colloquium

15 March 2023, 4.00 pm

Room B305, Bielefeldsaal

Building 1101, Welfengarten 1

"Observation of a gravitational Aharonov-Bohm effect and its implications for quantum superpositions of Newtonian gravitational fields"

The gravitational interaction of a tungsten source mass with atomic wavepackets has been observed in an atom deBroglie wave interferometer, in a regime where the separation distance between the interfering wavepackets is comparable to their distance to the source mass. We will discuss this experiment in the context of Aharonov-Bohm effects. We will describe the relevance of these results to observation of quantum superpositions of Newtonian gravitational fields.

All DQ-mat members and all interested are cordially invited to attend.