



CRC 1227
Designed Quantum States of Matter



GUEST LECTURE

Prof. Dr. David Weld

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DQ-mat Colloquium

Thursday, 05 December 2024, 4.00 pm

Room D326, Welfengarten 1, building 1101

"Magic-band Floquet-Bloch Atom Interferometry"

I will discuss a novel platform for compact, continuously-trapped atom interferometry using lithium Bose condensates in the Floquet-Bloch bands of an amplitude-modulated optical lattice. In analogy to the magic wavelengths employed by optical lattice clocks, we theoretically identify and experimentally realize magic band structures for which the interferometric phase is insensitive to noise in the trapping lattice intensity. Time permitting, I will also touch on related experiments in driven quantum matter, probing phenomena ranging from kicked quasicrystals to quantum chaos and interactive dynamics.

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