



CRC 1227
Designed Quantum States of Matter



GUEST LECTURE

Dr. Benjamin Roberts

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DQ-mat Colloquium

Physikalisch Technische Bundesanstalt
Bundesallee 100, 38116 Braunschweig
Albert-Einstein-Building, Room 201

Thursday, 28 November 2024, 4.00 pm

"Enlightening the search for dark matter (and exotic physics) with atomic phenomena"

The mystery of dark matter is one of modern physics' biggest puzzles. Astrophysical evidence suggests that around 85% of the universe's matter is "dark", yet we have never directly observed it, nor do we know its microscopic properties.

Most dark matter experiments focus on WIMPs (weakly interacting massive particles), with masses ~ 10 -1000 times that of a proton. But as WIMP searches continue to yield no results, interest is growing in exploring a wider range of possibilities – spanning an astounding 90 orders of magnitude in mass. Extending dark matter searches beyond the WIMP paradigm requires entirely new and sensitive experimental strategies. In this talk, I'll discuss the compelling case for particle dark matter and explore some new approaches that leverage atomic phenomena to extend the dark matter search into lower mass ranges enlightening our search for dark matter.

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