

THEORIEKOLLOQUIUM

Freitag, den 11.01.19 um 12:00 in MC 351

Prof. Dr. Oriol Romero-Isart

IQOQI and Universität Innsbruck

Towards Quantum Levitodynamics

Levitodynamics is the research field that studies the dynamics of degrees of freedom of trapped nanoparticles in high vacuum. The origins of levitodynamics can be traced back to the seminal work of Arthur Ashkin. Several experimental groups worldwide are currently trying to bring and control these degrees of freedom, in particular the center-of-mass motion, in the quantum regime. In this colloquium, I will first review the field of levitodynamics. Then I will discuss some theoretical questions about the internal temperature of levitated nanoparticles as well as report recent progress towards cavity-based ground state cooling of the center-of-mass of an optically levitated dielectric nanosphere.

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