
Plenary Talks - abstract



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LEVITATED NANOSPHERES IN THE QUANTUM REGIME

ABSTRACT

In this talk I will review current experimental effort and theoretical proposals for observing quantum phenomena with levitated nanospheres in high vacuum. Particular emphasis will be placed on discussing the opportunities that these systems offer; for instance, testing the quantum superposition principle at unprecedented regimes regarding mass and delocalization distances. Different scenarios with their distinctive features, applications, and underlying theory, will be discussed: optical levitation of dielectric nanospheres in high-Finesse optical cavities, magnetic levitation of superconducting microspheres coupled to quantum circuits, and magnetic levitation of single-domain magnetic nanoparticles.