Seminar/Talk

Rotational control of nanoparticles levitated in vacuum

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Host: Scott Waitukaitis

In the last few years, it has become possible to cool levitated nanoparticles to the ground-state of an optical potential, opening the possibility of performing quantum experiments with solid objects made out of billions of atoms. In this talk, I will outline why understanding and manipulating the rotation of levitated nanoparticles is key to this endeavour. I will introduce research from my group on controlling the motion and rotation of silicon nano-cylinders. and how they can be used for quantum and classical sensing applications. I will also introduce some novel detection and feedback control technology developed in the group, for tracking and controlling multiple levitated objects simultaneously. Nature Communications 14, 2638 (2023)Applied Physics Letters 121, 113506 (2022)Nature Communications 8, 1670 (2017)Optica 4, 356-360 (2017)

Friday, February 23, 2024 01:00pm - 02:00pm
Moonstone Bldg / Ground floor / Seminar Room F

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