universität ulm

Physikalisches Kolloquium — Physics Colloquium

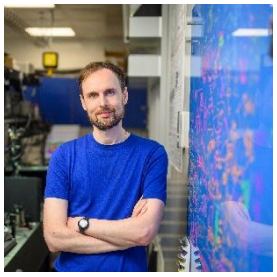
Einladung — **Invitation**

Monday, 03 February 2025

Lecture Hall N24/H13, at 16:15
Coffee and cookies will be served in front of the lecture hall from 16:00

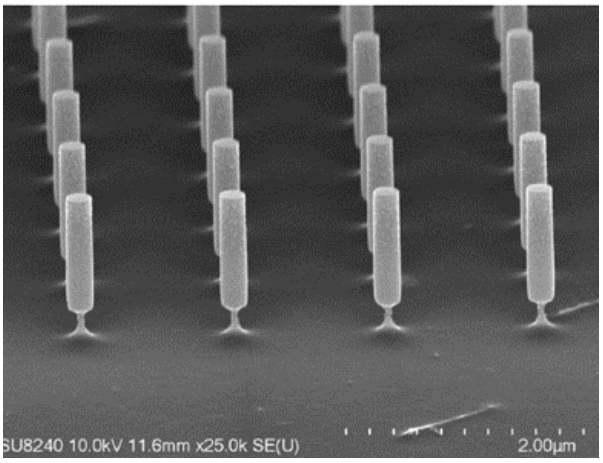
The rotational physics of nanoparticles levitated in vacuum

Dr. James Millen,
Department of Physics, Faculty of Natural, Mathematical and Engineering Sciences, King's College London, UK
https://www.levi-nano.com/



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.

Hu *et al.*, *Nature Communications* **14**, 2638 (2023)
Stickler *et al.*, *New Journal of Physics* **20**, 122001 (2018)
Kuhn *et al.*, *Nature Communications* **8**, 1670 (2017)
Kuhn *et al.*, *Optica* **4**, 356-360 (2017)



Host: Prof. Benjamin Stickler, Institute of Complexe Quantum Systems

Organisation: Prof. Dr. Jens Michaelis, Institute of Biophysics, jens.michaelis@uni-ulm.de, +49-731-50-23050