



INVITATION

to a **TALK** by

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What can you do with a beam of helium?

Thursday, June 1st 2023, 13:30 h

Location: Ernst-Mach Lecture Hall, 2nd floor, Boltzmannngasse 5

Hosted by: Markus Arndt

Abstract:

Helium atom scattering (HAS) is a well established but not very widespread material characterization technique. In this presentation I will show some of the exiting properties that can be measured with HAS, such as temperature dependent bending rigidity of 2-D material, electron-phonon coupling for low energy phonons in the acoustic range, measurements of the so-called surface boson peak in 2D, low energy surface phonons and surface structures and surface electron density distributions of insulating materials. I will also present new, ongoing instrumental development projects in my group: i) Neutral helium atom microscopy and how it can be used to measure surface roughness on the subnano scale, ii) the first monolithic atom interferometer and iii) Mask based lithography with metastable helium atoms (www.nanolace.eu).