



SEMINAR

2 February 2023, 10:00–11:00h
CFEL (Bldg. 99) seminar room I+II

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What can you do with a beam of helium?

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 sub-nano scale. ii) the first monolithic atom interferometer and iii) Mask based lithography with metastable helium atoms (www.nanolace.eu).