



INVITATION

to a **TALK** by

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Evanescent field trapping and manipulation from cold atoms to microparticles

Tuesday, March 21st 2023, 16:30 h

Location: Lise-Meitner Lecture Hall, 1st floor, Boltzmannngasse 5

Hosted by: Markus Arndt

Abstract:

This talk will be concerned with some of the many applications of ultrathin optical fibres. Such fibres are very thin glass wires with a diameter typically less than the wavelength of propagating light and they are fabricated using a heat-and-pull technique. They can have very low propagation losses and are readily integrated with other fibre devices. One significant feature of optical nanofibres is the very intense evanescent light field around them even for low propagation powers, making them very useful for numerous applications. For example, optical nanofibres can be used for micro and nanoparticle manipulation, as optical couplers for whispering gallery resonators, and for atom trapping and control. I will discuss some of these applications with an emphasis on the versatility of optical nanofibres as an experimental platform in (i) probing, manipulating, and trapping cold ground state and Rydberg neutral atoms for quantum technology applications and (ii) in microparticle manipulation for the exploration of fundamental phenomena of non-paraxial light fields.