



UNIVERSITÄT
LEIPZIG

Fakultät für Physik und Geowissenschaften

Prof. Dr. J. Deiglmayr
Prof. Dr. J. Vollmer

Physics Colloquium

Tuesday, 10 Mai 2022 at 17:00

Prof. Dr. Malte C. Gather

Humboldt Centre for Nano- and Biophotonics, Department of Chemistry, Universität zu Köln and School of Physics and Astronomy, University of St Andrews

Optical microresonators and nanolasers to explore living systems

Biophotonics has made astonishing advances in the last few decades, today allowing us to extract intricate knowledge about the morphology and composition of biological specimen. However, functional imaging and sensing, in particular to understand processes in biology that are driven by mechanical effects, remains a key challenge.

I will discuss new spectroscopic and imaging techniques for recording mechanical activity of cells and tissue that emerge from several developments in my lab. By monitoring resonance shifts of deformable optical micro-cavities and microscopic lasers, we are able to resolve cellular forces in the pN-range and to record cell-contraction induced refractive index changes down to 10^{-5} RIU. Deformable micro-cavities form a “smart Petri dish” for advanced cell culture studies while microscopic lasers constitute bio-compatible local probes for 3D measurements deep within scattering tissue.



Venue: Universität Leipzig, Faculty of Physics and Earth Sciences
04103 Leipzig, Linnéstraße 5, Lecture Hall for Theoretical Physics

Wir bitten Sie, die jeweils geltenden Maßnahmen der Infektionsschutzvorkehrungen zu beachten.