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Quantum Optics,
Quantum Nanophysics
& Quantum Information

INVITATION

to a **TALK** by

Dr. Marek Piliarik

Institute of Photonics and Electronics
The Czech Academy of Sciences

Dynamics of life at the single-protein level

Thursday, July 7th 2022, 14:00 h

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

Hosted by: Markus Arndt

Abstract

Live observation of the dynamical behavior of individual proteins is the most effective tool in understanding the function of biological matter. We develop microscopy techniques to understand the function of biological systems at the nanoscale by combining ultrasensitive microscopy with high-speed imaging, nanoscopic 3D reconstruction, and label-free super-resolution microscopy. By pushing the spatiotemporal resolution to microsecond and nanometer regimes we discern fast interactions of single molecules as well as conformation changes of single-proteins and access the forces and energies regulating mechanisms of biological systems. This toolbox allows us to explore interactions and dynamics at the level of single proteins and offers unique perspectives of challenging biological questions.