Cologne Evolution Colloquium

Joint Seminar with

Großes Physikalisches Kolloquium

CRC 1310 Predictability in Evolution

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Insights into Microbial Inner Life Using Single-Molecule Microscopy

We investigate how cellular life emerges and is regulated by molecular processes, using microbes from all life domains: archaea, eukaryotes, and prokaryotes. Our interdisciplinary group focuses on cell biology, employing techniques such as molecular biology, biophysics, and computational methods, with a special emphasis on quantitative single-molecule microscopy. We aim to understand how the spatial organization and dynamics of molecules in the cellular environment determines cell function and regulates life; e.g. by transient molecular interactions and the plasticity of complexes. By quantifying these molecular details in vivo, we create a spatially and temporally resolved picture of microbial cells. In this talk, tailored to a physics audience, I will discuss the potential of single-molecule techniques in cell biology, highlighting examples from our work and future directions. I will also emphasize our technical “fuel” - method developments in fluorescent labels, sample preparations, analysis software, and detectors.

Tuesday, 28 January, 2025, 16:30

Department of Physics, Lecture Hall III

or join via Zoom by scanning / clicking the QR code.

Hosted by Berenike Maier