



Carl von Ossietzky
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Institut für PHYSIK
PHYSICAL COLLOQUIUM

INVITATION

Monday, 21.11.2022, 4.15 p.m., Room W02 1-148 and per
video conference: <https://meeting.uol.de/b/anj-2vc-j6s-fwe>

speaks

**Prof. Dr. Joachim Krug,
Institute for Theoretical Physics,
Center for Data and Simulation, University of Cologne**

about

"How predictable is evolution?"

Biological evolution is an intricate interplay of deterministic and stochastic processes. As a consequence, predicting evolution is difficult even on relatively short time scales, as is currently exemplified by the SARS-Cov-2 pandemic. Nevertheless, laboratory experiments with bacteria are beginning to shed some light on the potential and limits of evolutionary predictions. In the colloquium the basic concepts underlying such experiments will be explained in a way that is accessible to a broad physics audience. I will then describe two recent studies illustrating aspects of predictability in the evolution of antibiotic resistance. The role of mathematical theory in the interpretation of the results will be emphasized, and conceptual links to statistical physics will be pointed out.

All interested persons are cordially invited.

Prof. Dr. Alexander Hartmann