Plenary Talk PV I Mon 9:00 Audimax 1

Inference and Mitigation of COVID-19 — •Viola Priesemann — MPI for Dynamics and Selforganization, Göttingen

How can we infer the spread of SARS-CoV-2 in a population, and how can we derive effective mitigation measures? How do non-pharmaceutical interventions, the vaccination progress and the emergence of new variants impact the viral spread? We recapitulate the basic principles of spreading dynamics, and highlight their implications for collective dynamics. On this basis, we investigate different COVID-19 mitigation strategies. In particular, we demonstrate a tipping point for the test-trace-isolate system, which incurs (transient) supra-exponential growth. We then show how the pace of lifting restrictions is determined by the progress of vaccination, and finally investigate the emergence of novel variants. With this work, we contribute to the basic understanding of spreading dynamics in populations, and provide approaches, which may guide mitigation policies.