UNIVERSITÄT DUISBURG ESSEN

PHYSIK E=

Physikalisches Kolloquium

**Mittwoch, 03.11.2021
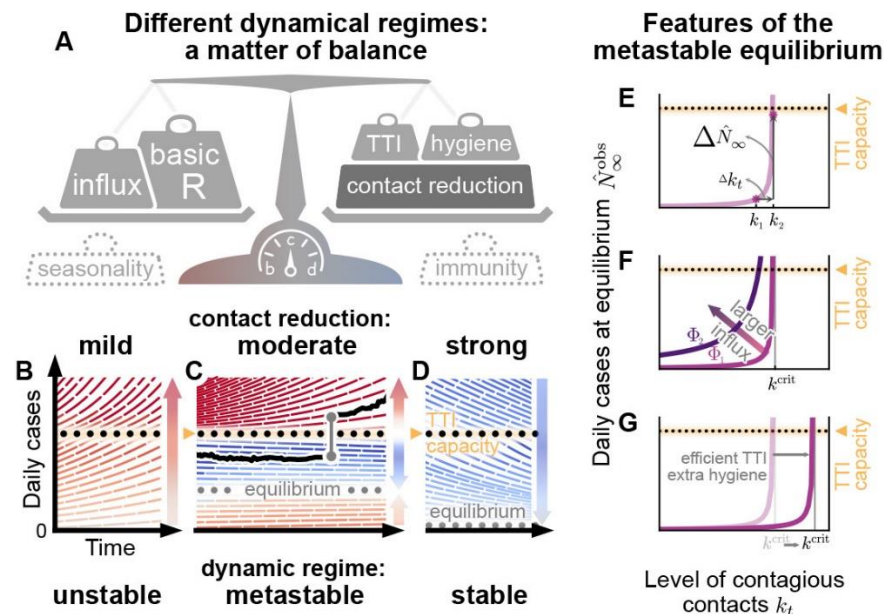13:00 Uhr
Hörsaal MC 122**

Spreading dynamics: from neural networks to COVID-19

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Self-Organization, Göttingen

How can we infer the spreading of activity and information in neural networks? How can we infer the spread of SARS-CoV-2 in a social network - even if only a fraction of all infections is reported? We recapitulate the basic principles of spreading dynamics, and investigate its role in shaping collective computation in neural networks.

We then use this basis to investigate COVID-19 mitigation strategies. In particular, we demonstrate a tipping point in the test-trace-isolate strategies, which incurs (transient) supra-exponential growth. Avoiding that tipping-point can greatly facilitate the control of COVID-19.