



# Seminar



## Critical transitions in complex networks

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Dr. Everton S. Medeiros

**Winter Term 2020/21**  
**ER 164 - Tuesday 16:15**

The seminar offers perspectives on our current research in the field of **Nonlinear Dynamics in Complex Networks**. The seminar is particularly suitable for BSc and MSc students looking for a final project. Students, who want to obtain a Seminarschein, are welcome as well. This semester, the focus of the seminar is the abrupt transitions severely transforming the dynamical behavior of complex systems. From the perspective of nonlinear systems, we offer an overview of such critical transitions by exploring concepts such as local and global stability, bifurcations, multistability, chaos, control, among others. The available topics range from the critical functioning of the brain and control of synchronization by noise in multilayer networks to cascading failures in power-grids and tipping elements of the Earth's climate.

### Literature and further information:

[https://www.itp.tu-berlin.de/ag\\_nichtlineare\\_dynamik\\_in\\_komplexen\\_netzwerken/nlds0/seminare/ws\\_2021/](https://www.itp.tu-berlin.de/ag_nichtlineare_dynamik_in_komplexen_netzwerken/nlds0/seminare/ws_2021/)

Quick Access 217066

### Schedule and Organization

If you are interested in a particular topic, please contact one of the advisors.  
Final assignment of the topics will be done on 03.11.2020.

### Contact:

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