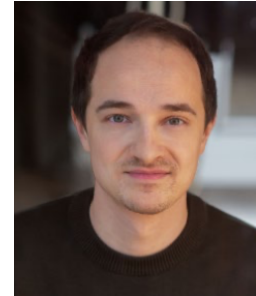


PHYSICS COLLOQUIUM

and GET-TOGETHER

Speaker: **Dr. Nico Wunderling**
Potsdam-Institute for Climate Impact Research, and
Center for Critical Computational Studies,
Frankfurt



Topic: **Overshooting tipping points in the Earth system: How nonlinear physics can contribute to global sustainability science**

Time and Tuesday, January 28, 2025, **2:50 pm** – hybrid event

place: **The colloquium will be held in REC/C213.**

Online participation possible:

Zoom-Meeting: Meeting-ID: 631 3817 8900 / passcode: PC-WiSe24

<https://tu-dresden.zoom-x.de/j/63138178900?pwd=E3ujrdyvlnABCPExxEhG5XErr7Cv5B.1>

Host: Fachschaftsrat Physik

Abstract: In Paris 2015, the global community has agreed to keep global warming levels well below 2.0°C aiming for 1.5°C. However, recent research has shown that overshooting this temperature guardrail is fast becoming inevitable, confirmed by the most recent global warming recordings for 2024 by the World Meteorological Organization. This endangers critical components of the Earth system, the so-called climate tipping elements (see Fig. 1) such as the Greenland and West Antarctic Ice Sheet, Atlantic Ocean currents, or the Amazon rainforest. In my presentation, I will provide a nonlinear physics perspective on the latest science on modelling climate tipping elements, their interactions, as well as assessing risks for tipping events under overshooting 1.5°C of global warming. Upon that, I will discuss our current modelling efforts to integrate human decisions into coupled World-Earth system models, sharing a modelers perspective on what may be necessary to limit tipping risks.

Bio: Nico Wunderling is a Postdoctoral Researcher in the Earth Resilience Science Unit at the Potsdam Institute for Climate Impact Research and the Center for Critical Computational Studies at Goethe University Frankfurt. His research focuses on the resilience of the Earth system, nonlinear dynamics of interacting tipping elements in the climate system as well as their effect on society and vice versa. For this research, Nico works with models informed by nonlinear physics, integrated human-Earth system modelling, as well as Earth system models of intermediate complexity (EMICs).

Get-Together:

The colloquium will be followed directly by a Get-Together with Dr. Nico Wunderling in REC/B101 (around 4:00 p.m.). All students and staff are invited to talk to the speaker and discuss perspectives on the academic career, work-life balance and the professional life as a scientist.