



Faculty Colloquium

Tuesday, 25 May 2021 at 17:00

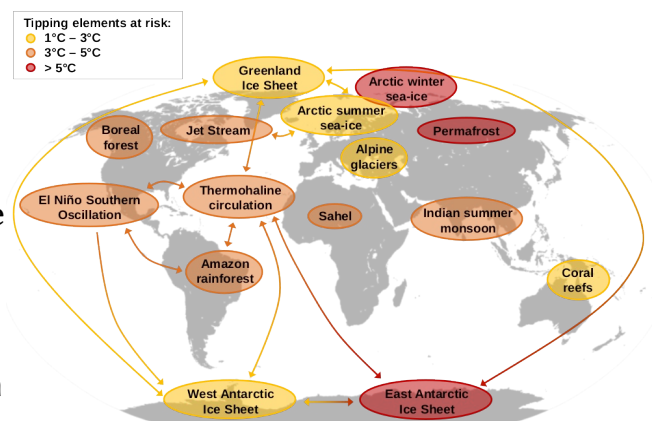
Dr. Jonathan Donges

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Interacting climatic and social tipping elements in the Earth system: Risks and opportunities

Tipping elements in the Earth's climate system are continental-scale sub-systems that are characterized by a nonlinear threshold behavior. These include biosphere components (e.g. the Amazon rainforest and coral reefs), cryosphere components (e.g. the Greenland and Antarctic ice sheets) and large-scale atmospheric and oceanic circulations (e.g. the thermohaline circulation, ENSO and Indian summer monsoon). Once operating near a threshold or tipping point that may be approached due to anthropogenic climate change, these components can transgress into a qualitatively different state by small external perturbations. The large-scale environmental consequences could impact the livelihoods of millions of people.

In this seminar, Dr Jonathan Donges reports on recent research on modelling individual tipping elements such as the Antarctic Ice Sheet, reinforcing (positive) feedbacks on anthropogenic global warming mediated by cryospheric tipping elements, interactions between climate tipping elements and the risk for resulting tipping cascades. Finally, he will present work on the potentials for positive social tipping dynamics that could help to achieve the rapid decarbonization of the world's social-economic systems needed to stabilize the Earth's climate in line with the Paris climate agreement.



Online Colloquium broadcasted by BigBlueButton at

<https://lecture.uni-leipzig.de/b/vol-qad-yhg-c2k>

