

Announcement

Advanced study course on climate science

by Hans von Storch

Based on my experience in climate science, I have compiled a series of lectures dealing with a number of issues, which I consider constitutive and challenging in the process of generating knowledge about climate change and climate impact.

Key specifics of climate knowledge making are:

- Climate comprises various components, in particular the hydro- and thermodynamics as well as the chemical composition of the atmosphere and of the ocean, but also the cryosphere, the biosphere in ocean and on land, and the socioeconomic system. **The linkage of society and climate creates conditions favoring politically charged scientific milieus**
- The system features a practically infinite number of degrees of freedom. Many of them exhibit nonlinear dynamics and linkages. Thus, **“noise” is an ubiquitous, constitutive element in the dynamics of climate.**
- In most cases, the dynamics may be ordered according to spatial and temporal scales, with larger scales dominating the smaller scales, while smaller scales influence the larger scales significantly, but in a statistical sense (parameterizations). **This ordering allows robust modelling and downscaling strategies.**

Form the full series of lectures

- Exploiting the ordered dynamics: downscaling
- Modelling: building knowledge
- Statistical analysis – explanatory and confirmatory
- Noise – nuisance and constitutive
- Pattern decomposition: EOFs and CCA
- Detection of non-natural change and Attribution to plausible causes
- The political dimension of climate science: Merton vs. Postnormal
- Regional Climate Service

A course given at the Institute of Coastal Research@HZG in January 2019 will present an **introduction** and a selection of three talks, namely: **Exploiting the ordered dynamics: downscaling; Modelling: building knowledge; Noise – nuisance and constitutive.**