SIMULATING CLIMATE

LECTURE

Johann Feichter

ABSTRACT

The transformation of climate science as a descriptive science to the physics of the atmosphere and the oceans was accompanied by an increasing use of numerical models and the application of fast computers. Numerical models are the only tools to understand the climate system behaviour, to separate cause and effect, to distinguish between natural and anthropogenic climate forcing to ask "what is, if…" questions, and to outline projections of possible future climate states.

The students should get an idea how climate models work and how they are built. In addition, we will discuss the practices, how such models are used, as well as their potential as a heuristic tool. We will also briefly touch on the networking of modeler groups and their efforts to introduce transparent and standardized methods of model evaluation.

Selected Publications

Feichter, Leisner: "Climate engineering: A critical review of approaches to modify the global energy balance" [Review]. In: *European Physical Journal* - special topics, Vol 176, pp 81-92, ID 437254.0, 2009

Kalinowski, Feichter, Nikkinen, Schlosser: „Environmental Sample Analysis". In: Avenhaus, Kyriakopoulos, Richard, Stein (Eds.), *Verifying Treaty Compliance, Limiting Weapons of Mass Destruction and Monitoring Kyoto Protocol Provisions*. Berlin / Heidelberg: Springer, 2006

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