



## Dealing with Uncertainty Simulation, Evaluation and Public Communication

Workshop at the Berlin-Brandenburg Academy of Science

Thursday, 23. November 2006

- Programme -

10.00 - 10.45 h The Epistemic Culture of Simulation Dr. Gabriele Gramelsberger, FU Berlin	14.30 - 15.15 h Sustainability in Environmental Sciences and Public Communication Prof. Dr. Harald Heinrichs, University of Lueneburg
10.45 - 11.45 h Early Development of Climate Modelling and the Prospect for the Future Prof. Dr. Syukuro Manabe, Princeton University	15.15 - 16.00 h Simulation and Public Communication/Presentation of the Result of two Media Studies Prof. Dr. Hans Peter Peters, Research Center Juelich/FU Berlin; Jana Demnitz, Franziska Mrosek, FU Berlin
12.00 - 12.45h Evaluation in Climate Modelling Dr. Johann Feichter, MPI for Meteorology Hamburg	16.30 - 17.30h Discussion
12.45 - 13.30h Dealing with Uncertainty: From Climate Research to Integrated Assessment of Policy Options Dr. Hermann Held, PIK Potsdam	

### Global Change in Water Availability

Evening lecture by Prof. Dr. Syukuro Manabe, Princeton University

19:00 h, Einstein Saal, Berlin-Brandenburg Academy of Science

Location BBAW Berlin

BBAW Berlin-Brandenburg Academy of Science  
Jägerstraße 22/23 - 10117 Berlin  
<http://www.bbaw.de/forschung/wie>

Workshop-Registration by 15.11.2006

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The workshop is supported by the German Federal Ministry of Research and Education. It is one of several project workshops within the research programme "Knowledge for Decision-making Processes - Research on the Relationship between Science, Politics and Society", coordinated by the BBAW Berlin-Brandenburg Academy of Science. <http://www.bbaw.de/forschung/wie/>. Organised by: Dr. Gabriele Gramelsberger, Institute of Philosophy, FU Berlin

## Dealing with Uncertainty - Simulation, Evaluation and Public Communication

Workshop at the Berlin-Brandenburg Academy of Science, 23.11.2006, 10:00 – 17:30 h

Evening Lecture by Prof. Syukuro Manabe on “Global Change of Water Availability”, 23. 11. 2006, 19:00 h

The workshop brings together climate modellers and science communication researchers. The unifying question is: How to deal with uncertainty, concerning global warming, in climate research as well as in socio-political and public contexts? On the one hand climate modellers have to ensure the quality and validity of their results which have an enormous impact on society and politics and on the other science communication researchers have to analyse the media strategies in communicating uncertainty to the public related to the sensitive topic of climate change. Although having different perspectives and relationships to climate change, the core on which both groups of researchers relate to is the computer based simulation and its scenarios.

Talking about uncertainty mainly denotes talking about the new and vague method of simulation. Therefore “dealing with uncertainty” can be reformulated as “dealing with simulation”. The workshop will give first hand insight into current strategies of climate modellers, how they deal with the uncertainty of the simulation’s results, how they improve them, and how they increase the validity of these results for policy options and public response to upcoming decisions. Furthermore the workshop will give information about the view of society, communicated by the Media, on the issue of climate change.

**Syukuro Manabe** (Princeton University), the doyen of climate modelling who wrote the first global climate model together with Richard T. Wetherald in the 1970s, will talk about the early development of climate modelling and the prospect for the future. He will give a first hand insight in the developments, improvements and problems of climate modelling. **Johann Feichter** (MPI Hamburg), head of the group “Aerosols, Clouds and Climate”, will present the advanced strategies for evaluating the current climate scenarios for the upcoming IPCC report 2007. **Hermann Held** (PIK Potsdam), senior researcher for uncertainty analysis of climate projections at the PIK Potsdam Institute for Climate Impact Research, will point out the major developments for the derivation of robust (climate policy) advice from coupled complex models under massive uncertainty. Dealing with uncertainty is the key issue in integrated assessment processes for achieving reliable and sustainable results at the interface between science, politics and the public.

**Harald Heinrichs** (Lueneburg University), assistant professor at the Institute for Environmental Communication at the University of Lueneburg, will explore the relationship between sustainability in environmental sciences and public communication. **Hans Peter Peters** [Research Center Juelich], communication researcher at the Program Group Humans-Environment-Technology of the Research Center Juelich, Germany, will describe some problems of public communication of science, focusing on computer simulation. Together with Harald Heinrichs he has recently completed a study on public meaning construction of climate change and its consequences. **Jana Demnitz** and **Franziska Mrosek [FU Berlin]**, Master's candidates at the Free University Berlin, will present results of exploratory studies of how computer simulation is included in TV science coverage and how the simulation sequences are perceived by the audience.

A science research overview on the new epistemic culture of simulation will be given as an introduction in the workshop by **Gabriele Gramelsberger** (FU Berlin). Gabriele Gramelsberger, science philosopher at the Institute of Philosophy of the Free University of Berlin, has carried out during the last years a science research study on climate modelling based on interviews. The study is part of the ongoing research project “Computer Based Simulation – New Instrument of Knowledge Production in Science” which is related to the BBAW research programme “Knowledge for Decision-making Processes – Research on the Relationship between Science, Politics and Society”.

Location: BBAW Berlin-Brandenburg Academy of Science, Einstein Saal, Jaegerstrasse 22/23, 10117 Berlin

Organised by: Dr. Gabriele Gramelsberger, Institute of Philosophy, FU Free University of Berlin

Registration by 15.11.2006: Gabriele Gramelsberger gab@zedat.fu-berlin.de

- Speakers -

### **Jana Demnitz**

is a student of journalism and mass communication at the Free University of Berlin. In her Master's Thesis she studies how media users perceive and make sense of computer simulation sequences in TV science programs.

### **Johann Feichter**

is head of the group "Aerosols, Clouds and Climate" at the Max Planck Institute for Meteorology, Hamburg. He is responsible for the development of the HAM aerosol module.

<http://www.mpimet.mpg.de/en/institut/mitarbeiter/feichterjohann/index.html>

- Lohmann U. and Feichter J. (2005): Global indirect aerosol effects: A Review, Atmospheric Chemistry and Physics; 5 (2005), 715-737 - SRef-ID: 1680-7324/acp/2005-5-715

### **Gabriele Gramelsberger**

is a senior researcher at the Institute of Philosophy of the Free University of Berlin. Within her research project "Computer Based Simulation – New Instrument of Knowledge Production in Science" she has carried out a science research study on climate modelling. <http://userpage.fu-berlin.de/~gab/>

- Gramelsberger, G. (2006): Story Telling with Code - Archaeology of Climate Modelling, in: TeamEthno-online, Issue 2, University of Lancaster, June 2006

### **Harald Heinrichs**

is an assistant professor at the Institute for Environmental Communication at the University of Lueneburg. He is analysing the impact of environmental, sustainability and risk communication on society.

<http://www.uni-lueneburg.de/infu/team/heinrichs.html>

- Heinrichs, H.; Peters, H. P. (2005): Media Communication on Climate Change and Coastal Protection: Reception and Interpretations by the Audience, in: Scientific Knowledge and Cultural Diversity : Proceedings of the Public Communication of Science and Technology Network, 8th International Conference Barcelona 2004. - Barcelona, Rubes Editorial S.L., 226 – 230

### **Syukuro Manabe**

is head of the Programme in Atmospheric and Oceanic Sciences at Princeton University. Together with Richard T. Wetherald he wrote the first global climate model in the 1970s.

<http://www.aos.princeton.edu/WWWPUBLIC/manabe/manabe.html>

- Manabe, S./Wetherald, R.T. (1975): The Effects of Doubling the CO<sub>2</sub> Concentration on the Climate of a General Circulation Model, in: Journal of Atmospheric Sciences 32/1975, 3-15

- Wetherald, R. T./Manabe, S. (2002): Simulation of Hydrologic Change Associated with Global Warming. Journal of Geophysical Research (107, D19): 4379-4393

### **Franziska Mrosek**

is a student of journalism and mass communication at the Free University of Berlin. As part of her Master's Thesis she conducts a content analysis of German TV science programs, looking particularly at the journalistic presentation of computer simulation.

### **Hermann Held**

is a senior researcher at PIK Potsdam Institute for Climate Impact Research. He is researching on global warming mitigation strategies robust under uncertainty of climate projections. <http://portal.pik-potsdam.de/members/held>

- Held, H., Kleinen, T. (2004): Detection of climate system bifurcations by degenerate fingerprinting, Geophys. Res. Lett. 31, L23207

- Schneider von Deimling, T., Held, H., Ganopolski, A., S. Rahmstorf, S. (2006): Climate sensitivity estimated from ensemble simulations of glacial climates, Climate Dynamics 27, 149-163

### **Hans-Peter Peters**

is communication researcher at the Program Group Humans-Environment-Technology of the Research Center Juelich, and adjunct professor of science journalism at the Institute for Media and Communication Studies of the Free University Berlin. His research deals with public communication of science, technology and the environment. In particular he studies the science-journalism interface and sense-making by the media audience. [http://www.fz-juelich.de/mut/mut\\_home](http://www.fz-juelich.de/mut/mut_home)

- Peters, H. P./Heinrichs, H. (2005): Öffentliche Kommunikation über Klimawandel und Sturmflutrisiken: Bedeutungskonstruktion durch Experten, Journalisten und Bürger, Jülich