



Public Lecture Series Invitation

The International Institute for Applied Systems Analysis (IIASA) and the Austrian Academy of Sciences have a joint public lecture series on scientific topics of mutual interest, aimed at a broad academic audience, decision makers, and the public.

We would like to invite you to the third lecture of the series.

Polar Regions under Climate Change

By **Peter Lemke**, and opening remarks by Georg Brasseur (Austrian Academy of Sciences) and Pavel Kabat (Director/CEO of IIASA)

on: Monday 11 November 2013 at 18:30 followed by a reception

Venue: Conference Center Laxenburg, Schlossplatz 1, 2361 Laxenburg

There will be a bus leaving from MAK, Stubenring 5, 1010 Vienna, at 17:15, and leaving for Vienna after the reception, at 20:30.

RSVP by 4 November 2013, indicating also whether you need a bus transfer:

Ms. Claudia Heilig-Staindl (staindl@iiasa.ac.at or 02236-807-266) or

Mag. Marie-Therese Pitner (pitner@oeaw.ac.at or 01-51581-3452)



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Polar Regions under Climate Change

High latitudes have received attention recently because of significant changes in the atmosphere, sea ice, and ocean, and on land, especially in the Arctic. The surface air temperature in the Arctic has increased about twice as fast as the global air temperature. The Arctic sea-ice extent in summer has decreased by 35% since 1979, and the sea-ice thickness during late summer has declined in the Central Arctic by about 40% since 1958. A warming has also been observed at depth in the Arctic Ocean and the Southern Ocean. But surprisingly there is no negative trend observed in the Antarctic sea ice. Both the Greenland and Antarctic ice sheets are losing mass, and the sea level is rising. Most of these observed trends are in agreement with warming scenarios performed with coupled climate models, which indicate an amplified response in high latitudes to increased greenhouse gas concentrations. But details of the complex interaction between atmosphere, sea ice and ocean, and the impacts on the ecosystem and the human society are still only marginally understood, a disturbing fact in view of the global experiment we are performing with the Earth. Results will be shown from the latest Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) and from a winter expedition the speaker has lead into the ice-covered Weddell Sea (Antarctica).

Peter Lemke

Peter Lemke, professor of physics of ocean and atmosphere at the University of Bremen and head of the Climate Sciences Research Division at the Alfred Wegener Institute of Polar and Marine Research, received his PhD in meteorology from the University of Hamburg in 1980. He has more than 30 years of experience of working in climate, sea ice and atmospheric research. Lemke has participated in eight polar expeditions with the German research icebreaker "Polarstern". On six expeditions he acted as chief scientist. His special interests are observation and modelling of high-latitude processes, especially the interaction between atmosphere, sea ice and ocean. Lemke served on many national and international committees. Until 1999 he was a member of the Scientific Steering Group of the Arctic Climate System Study (ACSYS) of the World Climate Research Program (WCRP) and the chairman of the ACSYS Numerical Experimentation Group which co-ordinated international atmosphere-sea ice-ocean modelling activities. From 1995 to 2006 he was a member of the Joint Scientific Committee for the World Climate Research Programme and served as its chair from 2000 to 2006. In 1991 Lemke received the German Polar Meteorology Award (Georgi-Preis) and in 2005 he became an Honourable Professor of the China Meteorological Administration, Beijing. He was the Coordinating Lead Author for Chapter 4 (Observations: Changes in Snow, Ice and Frozen Ground) of the IPCC Fourth Assessment Report published in 2007. For this activity Lemke received recognition of a substantial contribution to the award of the Nobel Peace Prize for IPCC in 2007. Since 2009 he coordinates the Climate-Initiative REKLIM (Regional Climate Change) of the Helmholtz Association (HGF), in which eight centres of the HGF are collaborating. In 2010 Lemke received the Bayer Climate Award. Lemke has been associated with IIASA as the German representative in the Council since 2003. He acted as Chair of IIASA's Program Committee from 2004 to 2008 and is the Chair of the Council since 2009.