

## **KEYNOTE ON "CLIMATE CHANGE - STATE OF THE SCIENCE"**

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### **ABSTRACT**

We are in the midst of a major global warming, as witnessed not just by temperature measurements, but also for example by the record loss of Arctic sea ice in recent years. In the year 2008, both the Northwest Passage and the Northeast Passage in the Arctic were open for ships to pass through for the first time in living memory. Satellite data show that the huge ice sheets in Greenland and Antarctica are losing mass at an accelerating pace. What are the causes of this warming? How much warming must we expect in future? How does it affect sea level, extreme events and other aspects of the climate system? And can we stop this warming, and how? These topics will be discussed based on the most recent data and climate simulations.

### **AUTHOR BIOGRAPHIES**

After studying physics at the Universities of Ulm and Konstanz and physical oceanography at the University of Wales (Bangor) Stefan Rahmstorf completed a thesis on general relativity theory. He then moved to New Zealand and obtained his PhD in oceanography at Victoria University of Wellington in 1990. His PhD work included a number of research cruises in the South Pacific.

After this he worked as a scientist at the New Zealand Oceanographic Institute, at the Institute of Marine Science in Kiel and since 1996 at the Potsdam Institute for Climate Impact Research. His work there focuses on the role of the oceans in climate change.

In 1999 Rahmstorf was awarded the \$ 1 million Centennial Fellowship Award of the US-based James S. McDonnell foundation. Since 2000 he teaches Physics of the Oceans as a professor at Potsdam University. Rahmstorf is a member of the Academia Europaea and of the German Advisory Council on Global Change (WBGU). He was also one of the lead authors of the 4th Assessment Report of the IPCC. In 2007 he became an Honorary Fellow of the University of Wales and in 2010 a Fellow of the American Geophysical Union.

He has published over 80 scientific papers (20 of which in the leading journals Nature, Science and PNAS) and co-authored four books. Available in English is *Our Threatened Oceans* (2009, with Katherine Richardson) and *The Climate Crisis* (2010, with David Archer).