Climate change: Past, present, future – How much is anthropogenic?

Panel debate in the plenary hall: 17.00-18.00
Possible one-to-one-interviews: From 18.00

Planet Earth has a superb archive of past climates documenting the many climate fluctuations throughout Earth’s history. Today’s changes should be seen in the context of these billions of years of natural change. Our present concern is the warming climate (c. 1.5 °C) since the Little Ice Age (c 1600-1800 AD), particularly during the last fifty years of rapid population growth, and a clear man-made impact on the local and regional environment. The need for food and energy, the latter dominated by fossil fuels, is rapidly increasing, and the accompanying environmental changes are a major concern.

To what extent is man changing Earth’s climate?

Our distinguished speaker in the StatoilHydro lecture at 13.00 today is Gerald A. Haug, a Professor of Climate geology at ETH in Zürich, Switzerland. His lecture will focus on the impact of climate change on human history during the last few hundred thousand years.

Much research effort has gone into interpreting variations in the hydrological cycle and the mean annual position of the Intertropical Convergence Zone (ITCZ) over tropical South America during the past millennia. Haug will show that the Terminal Collapse of the Classic Maya civilization occurred during an extended dry period from 700 to 900 AD.

“Data of comparable quality and resolution have been extracted from the sediments of lake Huguang Maar in coastal southeast China. A remarkable similarity in the records of ITCZ migration in east Asia and the Americas from 700 to 900 AD raises the possibility that the coincident declines of the Tang Dynasty in China and the Classic Maya in Central America were catalyzed by the same ITCZ migrations”, Professor Gerald A. Haug points out in his abstract.

“Comparison of our records with the Chinese dynastic history suggests that drought played a role in the terminations of dynasties during the past 4000 years”, he adds.

The morning session of the Climate Day presents the evidence for climate change throughout geological history and focuses on the last few million years of exceptionally cool climate with glacial-interglacial conditions. It discusses the evidence of temperature change on Earth and relationships to greenhouse gas concentrations in the atmosphere, particularly carbon dioxide. How much of the increase in temperature is caused by man-made CO₂?
The afternoon session will focus on issues such as climate predictability and industry's ability to cope with CO₂ emissions. Risk assessment is at the heart of the political dilemma. The day will culminate in a panel debate focusing on major climate questions:

• How rapidly will we need to reduce atmospheric CO₂ emissions and how reliable are the methods?
• What is the anthropogenic impact on climate?
• How do we find political consensus in a developing world with different needs?

For more information:
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Morning Programme: 08:30-13:00
* Introduction: Jörn Thiede, AWI, Germany
* Paleoclimate: The deep and modern time perspective, Eystein Jansen, University of Bergen, Norway
* Cenozoic Paleoclimate: From the Greenhouse to the icehouse world, Peter Barrett, Victoria University of Wellington, New Zealand
* Climate and global biogeochemical cycles in the ice core paleoperspective, Hubertus Fischer, AWI, Germany
* Ocean-atmosphere interaction and climate change from an Arctic perspective, Peter Schlosser, Lamont-Doherty Earth Observatory, USA
* Solar and Climate variability: past, present and future, Willie Wie-Hock Soon, Harvard - Smithsonian Center for Astrophysics, USA
* Cosmoclimaltology: The influence of Cosmic rays on Climate, Henrik Svensmark, Danish National Space Center, Denmark

StatoilHydro Plenary Lecture: 13:00-14:00
* Links between late Cenozoic paleoclimates and human history, Gerald Haug, ETH, Zürich, Switzerland

Afternoon Programme: 14:00-17:00
* How reliable are climate predictions? Lennart Bengtsson Max Planck Institute for Meteorology, Germany; University of Reading, UK
* Climate concerns: carbon capture and storage, Olav Kaarstad, StatoilHydro, Norway
* Global Change Science in China: Past, Present and Future, Xiaoping Yang, Institute of Geology and Geophysics, Chinese Academy of Sciences, China
* Arctic Climate: Present and future perspective, Ola M. Johannessen, Nansen Centre for Climate Research, Norway
* Climate Science and the need for action, Connie Hedegaard, Danish Minister of Climate and Energy

Panel debate: 17:00-18:00
Press conference: 18.00