Leopoldina
Nationale Akademie
der Wissenschaften

Curriculum Vitae Professor Dr Thomas Stocker

Image: Markus Scholz | Leopoldina

Name: **Thomas Stocker**
Born: **1 July 1959**

Research Priorities: Climate dynamics, palaeoclimate, climate modelling, ice core research, climate projection

Thomas Stocker is a Swiss geoscientist and climate physicist. He develops climate models to simulate the climatic changes of the last two million years as well as to project future changes in climate. He uses the analysis of ice cores, in particular greenhouse gas concentrations, and the dynamics of the earth system for the reconstruction of past climate chances.

Academic and Professional Career

2016	Guest Professor, International Pacific Research Center, University of Hawaii, Honolulu, USA
2006	Guest Fellow, International Pacific Research Center, University of Hawaii, Honolulu, USA
2005	Guest Fellow, National Center for Atmospheric Research, Boulder, USA
since 1993	Professor, Physics Institute and Department Head, Climate and Environmental Physics, University Bern, Bern, Switzerland
1991 - 1993	Associate Research Scientist, Lamont-Doherty Earth Observatory, Columbia University, New York City, USA
1989 - 1991	Postdoctoral Fellow, Department of Meteorology, McGill University, Montreal, Canada
1988 - 1989	SERC Research Fellow, Department of Mathematics, University College London, London, UK

1988	Research Associate, Laboratory of Hydraulics, Hydrology and Glaciology, Eidgenössische Technische Hochschule (ETH) Zurich, Zurich, Switzerland
1987	Ph.D., ETH Zurich, Zurich, Switzerland
1984	Diploma in Sciences (Environmental Physics), ETH Zurich, Zurich, Switzerland
1978 - 1984	Studies in Environmental Physics, ETH Zurich, Zurich, Switzerland

Functions in Scientific Societies and Committees

2019	Member, Science Advisory Panel, World Meteorological Organization
since 2018	Member, Selection Committee, Roger Revelle Medal, American Geophysical Union, USA
since 2017	President, Oeschger Centre for Climate Change Research, University Bern, Bern, Switzerland
2017 - 2020	Co-Chair, Scientific and Technical Advisory Board, Swiss Polar Institute, Switzerland
2017	Chair, Evaluation Panel Earth and Environment, Forschungszentrum Jülich, Jülich, Germany
since 2016	Chair, Scientific Steering Committee, Global Climate Observing System (GCOS), Zurich, Switzerland
2016 - 2019	Chair, Selection Committee, Hans Oeschger Medal, European Geosciences Union
since 2014	Chair, Scientific Advisory Board, Max Planck Institute for Meteorology, Hamburg, Germany
since 2014	Member and Advisory Council, Swiss Federal Institute for Forest, Snow, and Landscape Research, Birmensdorf, Switzerland
since 2013	Member, Steering Board, Mobiliar Lab for Natural Risks, University Bern, Bern, Switzerland
2012 - 2014	Member, Editorial Advisory Board, Quaternary Science Reviews
2009 - 2020	Member, Curatorium, ProClim – Forum for Climate and Global Change, Swiss Academy of Science (SCNAT), Switzerland
2007 - 2013	Director, National Centre for Climate Services (NFS) “Climate Variablility, Predictability and Climate Risks“, Swiss National Science Foundation (SNF), Switzerland
2008 - 2015	Co-Chair, Working Group 1 “Physical Science Basis”, Intergovernmental Panel on Climate Change (IPCC)
2007 - 2008	President, Curatorium, ProClim, SCNAT, Switzerland

2006 - 2010	Member, Research Council, SNF, Switzerland
2002 - 2008	Reviewing Editor, Science
1999 - 2012	Member, Editorial Board, Quaternary Science Reviews
1999 - 2012	Member, Editorial Board, Earth and Planetary Science Letters
since 1998	Contributor, Reports, Intergovernmental Panel on Climate Change (IPCC)

Honours and Awarded Memberships

since 2022	Foreign Member, Istituto Veneto di Scienze, Lettere ed Arti, Venice, Italy
2020	Médaille du prix de La Belgica, Royal Academy for Science and the Arts of Belgium (Académie royale des Sciences, des Lettres et des Beaux-Arts de Belgique), Belgium
since 2019	Member, German National Academy of Sciences Leopoldina, Germany
2018	Highly Cited Researcher, Thomson Reuters, Toronto, Canada
2017	International Fellowship, Chinese Academy of Sciences (CAS), China
2017	President's International Fellowship for Visiting Scientist, State Key Laboratory for Cryospheric Science, Lanzhou, China
2017	Swiss Science Prize Marcel Benoist, Marcel Benoist Foundation, Bern, Switzerland
2017	Cesare Emiliani Lecture, American Geophysical Union, USA
2017	Highly Cited Researcher, Thomson Reuters, Toronto, Canada
2017	Excellence Professorship, Professor Dr Werner Petersen Foundation, Kiel, Germany
2016	Honorary Doctorate, ETH Zurich, Zurich, Switzerland
2016	Highly Cited Researcher, Thomson Reuters, Toronto, Canada
since 2016	Honorary Foreign Member, American Academy of Arts and Sciences (AAAS), USA
since 2015	Foreign Member, Accademia Nazionale dei Lincei, Italy
2015	Highly Cited Researcher, Thomson Reuters, Toronto, Canada
2014	Highly Cited Researcher, Thomson Reuters, Toronto, Canada
2012	Fellow, American Geophysical Union, USA
2009	Hans Oeschger Medal, European Geosciences Union
2007	Descartes Prize for Transnational Collaborative Research, European Commission
2006	Honorary Doctorate, Université de Versailles Saint-Quentin-En-Yvelines, France
since 2004	Corresponding Member, Academy of Sciences and Literature Mainz, Mainz, Germany

since 1998	Member, Academia Europaea
1993	Swiss Science Prize Latsis, SNF, Switzerland
1987	Medal for outstanding doctoral thesis, ETH Zurich, Zurich, Switzerland
1985	Medal for outstanding Diploma-Thesis, ETH Zurich, Zurich, Switzerland

Research Priorities

Thomas Stocker is a Swiss geoscientist and climate physicist. He develops climate models to simulate the climatic changes of the last two million years as well as to project future changes in climate. He uses the analysis of ice cores, in particular greenhouse gas concentrations, and the dynamics of the earth system for the reconstruction of past climate chances.

The development of simplified coupled climate models allows simulations of climatic changes over many ice age cycles. These models are used to understand the dynamics recorded in paleoclimate archives, in particular records of greenhouse gases in polar ice cores and tracers measured in marine sediments. With that, Thomas Stocker opened new perspectives on both the role of palaeoceanographic trace substances in climate reconstructions as well as on calculation of future changes to the climate.

The coupling of the two hemispheres is primarily a function of the deep oceanic circulations, wherein a kind of interhemispheric seesaw shaped the climatic behaviour of the last ice age. Thomas Stocker investigates the function of this climatic seesaw and its influence on the global carbon cycle. The focus is on the transition period from about a million years ago where 40.000 year-long cycles gave way to those of the ice ages that lasted 100.000 years.

Current works are concerned with the tipping points in the coupled climatic system and how reaching them could be avoided. In ice core research the focus is on the determination of the concentration of green house gases (CO_2, CH_4), especially on the high-resolution reconstruction of fluctuations in the CO_2-Concentration during the last 800.000 years. Such measurements of ice core samples from Antarctica provide important information about the factors that propel and amplify changes in climate.

From 2008 to 2015, Thomas Stocker co-chaired “Working Group 1” of the Intergovernmental Panel on Climate Change (IPCC). The report was adopted in September of 2013 and formed the scientific basis of the Paris-Accord of 2015.