

## Personalia

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Interests: Climate Change, Extreme Events, Complex Earth Systems  
Atmospheric Circulation Stability, Geothermal Energy, C++, MPI, OOP  
Climate Science Communication

## Work Experience

### Research

- 2008–present **Potsdam Institute for Climate Impact Research (PIK)**, *Potsdam, Germany*.  
Development (C++, MPI) of the atmospheric module *Aeolus-1.0* of the next-generation Earth System Model *Climber-4*, to study extreme events and tipping-points in the climate system. Mathematical and statistical analysis of extreme weather events in a warming climate.
- 2003–2008 **Eidgenössische Technische Hochschule (ETH)**, *Zürich, Switzerland*.  
Development of hydro/geothermal reservoir modeling software, implemented into *CSMP++*. This novel multi-phase fluid-flow modeling tool accurately captures the physics of a boiling salty fluid and, by using MPI parallel techniques, allows for high-resolution 3D simulations. Applications include sub seafloor hydrothermal systems and the Basel Deep Heat Mining Project.
- 2000–2001 **Shell International Exploration and Production**, *Rijswijk, The Netherlands*.  
Trainee in Shell's Geothermal Team. Studying energy-optimization of full life-cycle of the HFR geothermal reservoir at Soultz (Fr.), part of the European Deep Geothermal Energy Program

### Exploration Geophysics

- 2001–2003 **Dutch Onshore Offshore Recruitment BV (DOOR)**, *Voorschoten, The Netherlands*.  
Marine Geophysicist. Assigned to offshore geotechnical companies (Van Oord-ACZ, Royal Boskalis-Westminster N.V., Gardline Surveys Ltd, Thales GeoSolutions Group). Responsible for mobilisation, data processing, quality control and interpretation during geophysical and hydrographical surveys. Final responsibility for data to be reported to client.
- 1995–2001 **Geo-Resources BV**, *Rotterdam, The Netherlands*.  
Trainee Geophysicist (part-time). Geophysical data processing and interpretation, writing reports and involved in the development of new geophysical equipment (Sparker).

### Miscellaneous

- 1995–2001 **Belgian Restaurant Dennemonde**, *Utrecht, The Netherlands*.  
Assistant cook
- 1995–2001 **Argentine Restaurant Gauchos**, *Utrecht, The Netherlands*.  
Assistant cook

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## Education

- 2003–2008 **Eidgenössische Technische Hochschule (ETH), Zürich, Switzerland.**  
Ph.D in Natural Sciences (Graduated March 2008)  
- Thesis title: Numerical Modeling of Mid-Ocean Ridge Hydrothermal Systems  
- Supervisors: PD Dr. Thomas Driesner & Prof. Dr. Christoph A. Heinrich  
- Distinguished with ETH-medal for best 5% theses
- 1995–2001 **University of Utrecht, Utrecht, The Netherlands.**  
M.Sc. in Geophysics (Graduated April 2001)  
- Thesis title: Modeling Hot Fractured Rock Systems. Case study of Soultz HFR reservoir  
- Supervisor: MA Dphil Christopher K. Harris

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## Awards / Grants

- 2011 **Climate-KIC**, Use of 'Greenhouse' office space for Science outreach project on Extreme Weather and Climate Change  
**Climate-KIC**, EUR ~10k grant for Science outreach project on Extreme Weather and Climate Change  
**Volkswagen Foundation**, "From a Dialogue on Extremes, to Extreme Dialogues", Science outreach project on Extreme Weather and Climate Change funded with EUR 65k
- 2009 **Volkswagen Foundation**, *Our Common Future Fellowship*
- 2008 **Eidgenössische Technische Hochschule (ETH-Zurich)**, *ETH-medal* for best 5% PhD theses  
**European Science Foundation**, participation in "New Methodologies and Interdisciplinary Approaches in Global Change Research"

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## Languages

Dutch	Fluent	<i>Mother tongue</i>
English	Fluent	<i>Reading, writing, conversation</i>
German	Good	<i>Reading, writing, conversation</i>
French	Moderate	<i>Reading, conversation</i>

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## Student Supervision

- 2011 J. Lehmann, Extreme rain and drought events in association with storm track changes  
S. Beuchel, Data analysis of atmospheric particles during Russian heat wave of 2010  
O. Eggert, Parallelization of *Aeolus*-1.0 using grid partitioning
- 2010 S. Chrisgau, Parallelization of *Aeolus*-1.0 using functional decomposition

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## Computer skills

Geo Data Processing	ProMAX, Terramodel, QINSy, Delph Elics	Programming Languages	C++, FORTRAN77/90, MPI, MATLAB
Earth Scientific	Climber2/3, CSMP++, Geocrack2D/3D	Development Platforms	MS Visual C++, Codewarrior8.0, Bloodshed DevC++, Total View
Operating Systems	Windows (XP, Vista), Linux (Fedora, Suse10, Ubuntu)	Other Software	MS Office, $\LaTeX$ , AutoCAD, Photo-shop5.0, SigmaPlot10

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## Selected Additional Courses

- 2010 European Research Course on Atmospheres, 11 Jan.-12 Feb., Grenoble, France
- 2006 Writing Research Papers for Publication at Sprachenzentrum ETH (Zürich, CH)  
Project Management at Business Tools AG (Zürich, CH)
- 2004-2005 Intensive German Course at Sprachenzentrum ETH (Zürich, CH)
- 2004 Intensive German Course at EBZ (Zürich, CH)
- 2002 Route Engineering Training at Global Marine Systems Ltd.(Chelmsford, UK)  
Underwater Acoustics at Skilltrade (Rotterdam, NL)  
Spanish course at Leidse Onderwijs Instelling (Leiderdorp, NL)
- 2001 QINSy Mapping and Route Design at QPS BV (Zeist, NL)  
Hydrography at Skilltrade (Rotterdam, NL)
- 1998 Intensive Spanish course (San Pedro, Guatemala)  
PADI Open water & Advanced Open water dive courses (Utila, Honduras)

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## Selected Marine Geophysical Surveys

- 2003 Offshore rock dumping onboard flexible fallpipe vessels Tertnes and Rockness (Van Oord-ACZ), North Sea. Multibeam data processing and quality control using TerraModel  
Port of Göteborg dredging and rock blasting project (Royal Boskalis Westminster NV), Sweden. Multibeam data processing and quality control
- 2002 Offshore Nigeria deep seismics oil exploration (Gardline Surveys Ltd.). Deep seismics, responsible for data quality and processing using ProMAX.  
Red Sea pipeline route survey offshore Ras Gharib (Thales GeoSolutions), Egypte. Chief geoscientist on board, responsible for survey data using side scan sonar, sub bottom profiler and magnetometer
- 2001 Two pipeline route surveys in Gulf of Arabia (ADNOC). Chief geoscientist on board, responsible for survey data using side scan sonar and sub bottom profiler.  
Baltic pipeline route survey 2001 onboard M/V Geograph. Shallow seismics employing surface-tow sparker and Delph Elics processing software.

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## Selected Geologic Fieldworks

- 2005 Society of Economic Geologists (SEG) ore-deposit fieldwork to Peru
- 1998 Geology of the Pyrenees, organized by Geology department of University of Utrecht

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## Memberships

- American Geophysical Union (AGU)
- Society of Economic Geologists (SEG), Secretary from 2004 to 2006 of SEG-Zürich