

CURRICULUM VITA

Dr. Olga Zolina



Date of birth: 06 February 1975
Place of birth: Moscow, USSR
Citizenship: Russian citizen, German resident
Marital status: married, one son
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Present position(s):

- Associate professor at Université Joseph Fourier (CNRS-UJF chair of excellence), Grenoble, France

Areas of expertise:

- Climate change in global- and continental-scale water cycle
- Extreme climate events, statistical modelling of extreme precipitation
- Dynamics of midlatitude and polar cyclones in the present and future climate
- Air-sea interaction at synoptic and climate time scales
- Tropical meteorology, El-Nino – monsoon interaction

Education and degrees

1992-1998 Department of Meteorology, Moscow State University, Advisor - Prof. Evgeny K Semenov
1998 **MSc (with excellence)**, thesis “The El-Nino impact on interannual variability in the activity of Indian monsoon on the basis of ECMWF analyses”
1998-2002 Post-Graduate Course at the P.P.Shirshov Institute of Oceanology, Russian Academy of Science, Advisor - Prof. Dr. Sergey K. Gulev
2002 **PhD in physics and mathematics (with excellence)**, thesis “Cyclone activity over the Northern Hemisphere and its linkages with sea-air interaction and European climate”
2011 **Dr. Sci. Habilitation procedure is initiated** (required talk on the thesis topic was delivered to the Fachgruppe Erdwissenschaften in November 2010, completion is expected in the second half of 2011)

Advanced schools and training

1997 European Summer School on Ocean Forecasting (Oristano, Italy)
1998 Advanced European Research Courses in Atmospheric Sciences (Grenoble, France)
2000 NCAR/ASP Summer Colloquium “Dynamics of Decadal to Centennial Climate Variability” (Boulder, Colorado, USA)
2002 NCCR Climate Summer School (Grindelwald, Switzerland)

Positions held

- 2011-present** Associate professor at Université Joseph Fourier (CNRS-UJF chair of excellence), Laboratoire de Glaciologie et Géophysique de l'Environnement (LGGE), Grenoble, France
- 2009-2011** Project lead scientist at Meteorologisches Institut der Universität Bonn, Bonn, Germany (DFG-funded project STAMMEX (Spatial and Temporal Scales and Mechanisms of Extreme Precipitation Events over Central Europe))
- 2007-2009** Research associate at Meteorologisches Institut der Universität Bonn, Bonn, Germany
- 2002-2007** Research associate at Meteorologisches Institut der Universität Bonn, Bonn, Germany (50%)
Senior research scientist at P.P.Shirshov Institute of Oceanology, RAS, Moscow, Russia (50%)
- 1998-2002** PhD Fellow, then Research associate at P.P.Shirshov Institute of Oceanology, RAS, Moscow, Russia
- 1996-1998** Research student at P.P.Shirshov Institute of Oceanology, RAS, Moscow, Russia

Teaching

Meteorological Institute, University of Bonn (in English)

At bachelor level

- *Introduction to Remote Sensing (exercises)*, 2 hours/week, summer semester 2010,2011
- *Seminar zur meteorologischen Arbeitsmethodik: Literaturkurs*, 2 hours/week, summer semester 2009

Moscow State University (in Russian)

At bachelor level:

- *Practice of meteorological observations* (2 hours/week, winter semesters 2001,2002)
- *Undergraduate student field practice in meteorology* (2 weeks of summer semesters 2001, 2002)

At master level:

- *Introduction to dynamic meteorology (with exercises)* (4 hours/week, summer semesters 2001, 2002)

Supervising master students:

- *Natalia Tilinina, diploma thesis – “Propagation of the low level instabilities in the Pacific tropics and their association with El-Nino”* (2008)
- *Sergey Shuvalov, diploma thesis – “Characteristics of cyclone activity in the regional North American Reanalysis” (NARR)* (2009)

Supervising PhD student:

- *Pavel Shabanov, thesis – “Development of optimal interpolation algorithms for rain gauge precipitation data”* (2010-2012)

External working experience

- 2002** visiting researcher, IFM-GEOMAR, Kiel, Germany (academic host - Prof. Dr. Eberhard Ruprecht)
- 2011** visiting professor, KAUST, Kingdom of Saudi Arabia

Most important professional activities

- 2011** Convener of special session “Understanding and characterizing climate extremes” at the WCRP Open Science Conference, 2011, Denver, Colorado, USA
- 2011** Co-convener of session “High-impact weather and extreme climate events” at the XXV IUGG General Assembly, 2011, Melbourne, Australia

- 2010** Chair, Scientific Organizing Committee “WCRP-UNESCO Workshop on metrics and methodologies of estimation of extreme climate events”, UNESCO headquarters, Paris, France
- 2007– present:** Member of the GEWEX (WCRP Global Energy and Water Cycle Experiment) Scientific Steering Group (responsibilities: GEWEX Radiation Panel, extreme climate and weather events)
- 2009– present:** Member of the project team for the international IMILAST (Intercomparison of midlatitude storm diagnostics) project
- 2009** Reporter for European Alliance of Global Change Committees, Bonn/Koenigswinter, Germany

Projects (most important past and active support)

- 2000-2003** – “North Atlantic Oscillation: Regional Impacts on European Climate”. Volkswagen Stiftung (*project scientist*)
- 2002-2012** – “Large Scale Climate Changes and their Environmental Relevance”. Funded by North Rhine-Westphalian Academy of Science (*research associate*)
- 2003-2005** – “Impact of Atlantic Cyclones on European Precipitation Extremes”. Granted by Russian Foundation for Basic Research (03-05-64506) (*principal investigator*)
- 2008-2010** – “Mechanisms of the large-scale variability of extreme precipitation over the European continent from observational data and present climate modelling”. Granted by Russian Foundation for Basic Research (08-05-00878-a) (*principal investigator*)
- 2007-2010** – “Mechanisms and predictability of long-term variability of extreme precipitation over Europe from observations and models”. Excellence grant of the Russian Ministry of Education and Science (MK-345.2009.5) (*principal investigator*)
- 2009-2012** – “Spatial and Temporal Scales and Mechanisms of Extreme Precipitation Events over Central Europe (STAMMEX)”. Granted by German Research Foundation (DFG) (PN 50160119) (*principal investigator*)

Invited speaker

- 2004** – 25th meeting of Joint Scientific Committee, WCRP, Moscow, Russia
- 2008** – GEWEX Scientific Steering Group meeting, Buenos-Aires, Argentina
- 2008** – ESF Science Policy Conference on "Global challenges and the need for cooperation", Stockholm, Sweden
- 2009** – GEWEX Scientific Steering Group meeting, Irvin, CA, USA
- 2009** – Solicited presentation at 9th EMS Annual Meeting/9th European Conference on Applications of Meteorology, Toulouse, France
- 2010** – Invited lecture at 7. Annaberger Klimatagen, Annaberg, Germany
- 2010** – 2nd Pan-GEWEX meeting, Seattle, USA
- 2010** – WCRP-UNESCO Workshop on metrics and methodologies of estimation of extreme climate events, Paris, France
- 2011** – Representative of WCRP/GEWEX for GWSP (Global Water System Project) Scientific Steering Committee, Bonn, Germany
- 2011** – Solicited presentation at EGU2011, Vienna, Austria

Research cruises and field activity

- 2001** – meteorologist, research cruise on RV “Academician Ioffe”, Drake Passage and Weddell Sea
- 2001** – chief meteorologist, field expedition, Antarctic peninsula
- 2001** – meteorologist, research cruise on RV “Aquanavt”, Black Sea
- 2005** – chief meteorologist, research cruise on RV “Academician Sergey Vavilov”, South Atlantic

Awards:

- 1999** - Young scientists award, Russian Academy of Sciences

2004 – Award for Outstanding Environmental Research of Russian Academy of Science

2005 – Gold medal of Russian Academy of Science for Outstanding Young Scientists

Professional societies

from 1999 European Geophysical Society (European Geosciences Union from 2004)

from 2003 German Meteorological Society

Reviewer

Journals: *Journal of Climate, Journal of Applied Meteorology and Climatology, Geophysical Research Letters, Journal of Geophysical Research, International Journal of Climatology, Theoretical and Applied Climatology, Climatic Change, Global and Planetary Change, Advances in Water Resources, Hydrology and Earth System Sciences.*

Foundations and Agencies: *Natural Environment Research Council (United Kingdom), IPCC Special report on climate extremes*

Languages:

Russian (native), English (fluent), German (fluent)

Dr. Olga Zolina

A handwritten signature in blue ink, appearing to be 'OZolina', enclosed in a light blue circular stamp.

9 December 2011

List of Publications of Dr. Olga Zolina

Peer reviewed:

- Zolina, O.**, C. Simmer, S. K. Gulev, 2011: Changes in the duration of European wet and dry spells during the last decades. *J. Climate*, submitted.
- Kulikov, E.A., P. Tkalich P., **O. Zolina**, S. Gulev, 2011: The nature of extreme sea levels in Singapore: interaction of tides with meteorological storm surges. *Continental Shelf Research*, submitted.
- Zolina, O.**, 2011: Changes in European Extreme Precipitation. In: “*Changes of Flood Risk in Europe*”, edited by Zbyszek Kundzewicz, IAHS Press (Wallingford, UK), in press.
- Zolina, O.**, 2011: Changes in synoptic structure of European precipitation and its impact on estimation of heavy rainfalls from daily rain gauges records. *Transactions of Russian Academy of Sciences*, **5**, 436, 690-695.
- Zolina, O.**, V. Detemmerman and K. E. Trenberth, 2010: Improving the accuracy of estimation of climate extremes - WCRP-UNESCO Workshop on "Metrics and methodologies of estimation of extreme climate events". *EOS Transactions*, **91**, 51, 506.
- Zolina, O.**, C. Simmer, S. K. Gulev and S. Kollet, 2010: Changing structure of European precipitation: longer wet periods leading to more abundant rainfalls. *Geophys. Res. Lett.*, **37**, L06704, doi:10.1029/2010GL042468.
- Zolina, O.**, C. Simmer, K. Belyaev, A. Kapala, S. K. Gulev, 2009: Improving estimates of heavy and extreme precipitation using daily records from European rain gauges, *Journal of Hydrometeorology*, **10**, doi: 10.1175/2008JHM1055.1, 701-716.
- Loeptien, U., **O. Zolina**, S. K. Gulev, M. Latif and V. Soloviov, 2008: Cyclone life cycle characteristics over the Northern Hemisphere in coupled GCMs. *Clim. Dynamics*, doi: 10.1007/s00382-007-0355-5.
- Zolina, O.**, C. Simmer, A. Kapala, S. Bachner, S. K. Gulev, H. Maechel, 2008: Seasonality of precipitation extremes over Central Europe during the last 50 years. *J. Geophys. Res. - Atmospheres*, **113**, doi:10.1029/2007JD008393.
- Zolina, O.**, C. Simmer, A. Kapala, S. K. Gulev, 2005: On the robustness of the estimates of centennial-scale variability in heavy precipitation from station data over Europe. *Geophys. Res. Lett.*, **32**, L14707, doi:10.1029/2005GL023231.
- Zolina, O.**, A. Kapala, C. Simmer, S. K. Gulev, 2004: Analysis of extreme precipitations over Europe from different reanalyses: a comparative assessment. *Global and Planetary Change*, **44**, 129-161.
- Jung, T., M. Hilmer, E. Ruprecht, S. Kleppek, S. K. Gulev and **O. Zolina**, 2003: Characteristics of the recent eastward shift of interannual NAO variability. *Journal of Climate*, **16**, 3371-3382.
- Zolina, O.**, and S. K. Gulev, 2003: Synoptic variability of ocean-atmosphere turbulent fluxes associated with atmospheric cyclones. *Journal of Climate*, **16**, 2717-2734.
- Gulev, S. K., V. Grigorieva, K. M. Selemenov, and **O. Zolina**, 2003: Evaluation of surface winds and waves from voluntary observing ship data. *Advances in Applications of Marine Climatology*, WMO, Geneva, 53-67.
- Zolina, O.**, and S. K. Gulev, 2002: Improving the accuracy of mapping cyclone numbers and frequencies, *Mon. Wea. Rev.*, **130**(3), 748-759.
- Gulev, S. K., **O. Zolina**, and S. Grigoriev, 2001: Climate changes in the winter cyclogenesis over the Northern Hemisphere from the NCEP/NCAR Reanalysis data, *Clim. Dynamics*, **17**(6), 795-809.
- Grigoriev, S., S. K. Gulev, and **O. Zolina**, 2000: Innovative software facilitates cyclone tracking and analysis. *EOS Transactions*, **81**, 170.
- Gulev, S. K., **O. Zolina**, and Y. Reva, 2000: Synoptic and sub-synoptic variability in the North

Atlantic as revealed by the Ocean Weather Station data. *Tellus*, **52A**, 323-329.

Zolina, O., and E. Semenov, 2000: Impact of the El-Nino - Southern Oscillation on the summer Indian monsoon rainfall predictability. *Meteorology and Hydrology*, **1**, 22-32.

Other:

Zolina, O., and V. Detemmerman, 2011: Workshop Is First Step in Improving Accuracy of Estimation of Extreme Climate Events. *GEWEX News*, **21(1)**, 7-9.

Zolina, O., 2009: Statistical modelling of the catastrophic atmospheric precipitation. In: *Dynamics and mathematical modelling of geophysical and hydrometeorological processes*. Moscow, MAIK, 230-240.

Zolina, O., C. Simmer, A. Kapala, S. K. Gulev, 2005: Use of indices in characterizing precipitation extremes: a European example. *GEWEX News*, **15(2)**, 5-6.

Zolina, O., S. K. Gulev, and S. Grigoriev, 1999: Seasonal and interannual variability in the cyclogenesis over the Northern Hemisphere from the NCEP/NCAR Reanalysis data. *WCRP Second International Conference on Reanalysis Volume*, WCRP-104, WMO/TD-876, 351-354.

Zolina, O., and S. K. Gulev, 1998: Validation of the NCEP Reanalysis against instrumental measurements and VOS observations and the use of Reanalysis products for the study of weather regimes variability in the North Atlantic. *WCRP First International Conference on Reanalysis Volume*, WCRP-104, WMO/TD-876, 298-301.

Conferences (see also under ‘invited speaker’)

- XXV General Assembly of European Geophysical Society, Den Haag, The Netherlands, 1999, oral presentation
- PACON-99 Symposium, Moscow, Russia, 1999, oral presentation
- 150th Anniversary Conference “Meteorology at the Millenium”, Cambridge, UK, 2000, oral presentation
- 8th Conference on Statistical Meteorology, Lunenburg, Germany, 2001, oral presentation
- WCRP/SCOR Workshop on Intercomparison and Validation of Ocean-Atmosphere Flux Fields, Washington DC, USA, 2001, poster presentation
- XXVII General Assembly of European Geophysical Society, Nice, France, 2002, oral presentation
- XXVIII EGS-AGU-EUG Joint Assembly, Nice, France, 2003, poster presentation
- International Conference on Earth System Modelling, Hamburg, Germany, 2003, oral presentation
- 6th Deutsche Klimatagung, Potsdam, Germany, 2003, oral presentation
- 4th Study Conference on BALTEX, Gudhjem, Bornholm, Denmark, 2004, oral presentation
- 14th International Conference on Clouds and Precipitation, Bologna, Italy, 2004, poster presentation
- Workshop on Trends in Global Water Cycle Variables, Paris, France, 2004, oral presentation
- 2nd General Assembly EGU, Vienna, Austria, 2005, poster presentation
- 5th International Scientific Conference on the Global Energy and Water Cycle, Orange County, California, USA, 2005, oral presentation
- Workshop on “Trend and Extreme Value Analysis of Hydrometeorological Time Series”, Potsdam, Germany, 2005, oral presentation
- 2nd Integrated Global Observing Strategy Partners (IGOS-P) Integrated Global Water Cycle Observation Theme (IGWCO) Workshop, Paris, France, 2006, oral presentation
- 2nd International Conference on Earth System Modelling, Hamburg, Germany, 2007, poster presentation
- GEWEX/CEOP Extremes Workshop, Vancouver, Canada, 2008, oral presentation
- 1st International Workshop on Data Analysis and Modelling in Earth Sciences, Potsdam, Germany, 2008, oral presentation

- 6th International Scientific Conference on the Global Energy and Water Cycle, Melbourne, Australia, 2009, oral presentation
- 8. Deutsche Klimatagung, Bonn, Germany, 2009, oral presentation
- 10th International Precipitation Conference, Coimbra, Portugal, 2010, oral presentation
- Workshop „Extremes in Weather and Climate“, Bonn, Germany, 2010, oral presentation
- DACH, Bonn, Germany, 2010, oral presentation