Dr. Nauman Khurshid Awan

Date of birth: 30-05-1978
Place of birth: Rawalpindi
Marital Status: Married
Nationality: Pakistani
City of residence: Vienna

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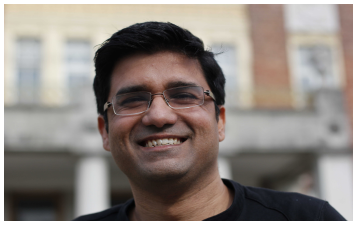

Academic

Karl Franzens University, Graz, Austria **2011**

PhD Thesis
Performance of high resolution regional climate models in the European Alpine region

Advisor:
Dr. Gottfried Kirchengast
Co-Advisor: Dr. Andreas Gobiet

Quaid-i-Azam University, Islamabad **2006**

M.Phil. research on "Efficiency measurement of a cylindrical shape scintillator detector, A Monte Carlo Simulation Study".

Advisor:
Dr. Qaisar Abbas Naqvi
Co-Advisor: Dr. Khalid Jamil

Allama Iqbal Open University, Islamabad **2003**

M.Sc. in Physics

The University of Punjab, Lahore **2000**

B.Sc. with Physics and Mathematics

Grants and trainings

National Center for Atmospheric Research (NCAR), Boulder, USA **2007**
Full funding through Wegener Center for Climate and Global Change, Graz, Austria for WRF user's training, 23-27 July, 2007 and for 10th WRF user's workshop, 23-26 June, 2009 **2009**

University of Split, Croatia
Full funding by University of Split Croatia for the Split workshop on Atmospheric physics and Oceanography (SWAP), 21st – 31st May, 2009 **2009**

International Center for Theoretical Physics (ICTP), Trieste, Italy
Full funding awarded by ICTP for:
Fourth ICTP Workshop on the theory and use of regional climate models: Applying RCMs to Developing Nations Support of Climate Change Assessment and Extended-Range Prediction, 3rd – 14th March, 2008 **2008**
Workshop on high resolution climate modelling, 10th – 14th August, 2009 **2009**
Fifth ICTP Workshop on theory and use of regional climate models, 31st May – 11th June, 2010 **2010**

ETH Zürich, Zürich, Switzerland **2011**
Funding awarded by ETHZ for invited talk in Workshop on Strengthening North-South Cooperation in Climate Change Research: an initiative for the Upper INDUS River Basin, 02nd – 6th May, 2011

Broad Scientific Interests

Extreme precipitation events, Regional Climate Modeling, Physical Parameterizations, feed back mechanism in Atmospheric prrocesses, Mountain Climatology, Climate change impacts on Agriculture, hydrological cycle and impact of climate change on socio-economic sectors

Positions

Senior Scientist, Model development group, Zentralanstalt für Meteorologie und Geodynamik (ZAMG), Vienna, Austria **May 2014 – till date**

Senior Scientist, Institute for Meteorology, Department of Water Atmosphere and Environment, Universität für Bodenkultur (BOKU), Vienna, Austria	**Oct. 2011- Apr. 2014**
Senior Scientist, Wegener Center for Climate and Global Change, Graz, Austria	**Aug. 2011 – Oct. 2011**
Scientist, Wegener Center for Climate and Global Change, Graz, Austria	**Mar. 2007 – Aug. 2011**
Scientific officer, Global Change Impact Studies Center, Islamabad, Pakistan	**Sep. 2005 – Feb. 2007**

Publications

Journal Publications

Martin Suklitsch, Andreas Gobiet, Heimo Truhetz, **Nauman Khurshid Awan**, Holger Göttel and Daniela Jacob, **2010**,
Error characteristics of high resolution regional climate models over the Alpine area, Climate Dynamics, DOI: 10.1007/s00382-010-0848-5

Nauman Khurshid Awan, Andreas Gobiet and Heimo Truhetz, **2011**,
Parameterization induced error-characteristics of MM5 and WRF operated in climate mode over the Alpine Region: An ensemble based analysis,
J. Climate, doi: 10.1175/2011JCLI3674.1

Andreas Franz Prein, Andreas Gobiet, Martin Suklitsch, Heimo Truhetz, **Nauman Khurshid Awan,** Klaus Keuler, Goran Georgievski, **2013,**
Added Value of Convection Permitting Seasonal Simulations, Climate Dynamics, DOI: 10.1007/ s00382-013-1744-6

Nauman Khurshid Awan, Andreas Gobiet and Martin Suklitsch, **2014**,
The role of regional climate model setup in simulating two extreme precipitation events in the European Alpine region, Climate Dynamics, DOI 10.1007/s00382-014-2323-1

Nauman Khurshid Awan, H. Formayer, **2014**, Cutoff low systems and their relevance to large-scale extreme precipitation in the European Alps. Theoretical and Applied Climatology. 129. 10.1007/s00704-016-1767-0

Conference Publications

Alexander Kann, Yong Wang, Aitor Atencia, Nauman Awan, Markus Dabernig, Josef Kemetmüller, Florian Meier, Irene Schicker, Lukas Tüchler, Clemens Wastl, and Christoph Wittmann,
Seamless probabilistic analysis and forecasting: from minutes to days ahead, EGU General Assembly 2018, Vienna, Austria, 8-13 April, 2018.

N.K. Awan, B. Bica, J. Kemetmüller,
INCA analysis and nowcasting as part of the international collaborative experiments for the PyeongChang Olympic and Paralympic Games 2018
34th International conference on Alpine Meteorology , Reykjavík, Iceland, 19-23 June 2017

N. K. Awan, I. M. Mautner, F. Meier, A. Kann, C. Wittmann, Y. Wang,
Permance of a satellite driven nowcasting system and a high resolution NWP AROME-1km model over the Eastern Alpine area, International conference on Alpine Meteorology, 33rd International conference on Alpine Meteorology, Austria, 31 August - 4 September 2015

H. Formayer, **N.K. Awan**, D. Leidinger,
Cut of Lows" unf ihre Relevanz bezüglich Starkniederschläge im Alpenraum.
5. Österreichischer MeteorologInnentag, Feldkirch, 7. - 8. November 2013

N. K. Awan, H. Formayer,

The relevance of cut-off low systems to manifestation of large scale extreme precipitation events in the Alpine region,
32nd International conference on Alpine Meteorology, Slovenia, 3 - 7 June 2013

N. K. Awan, H. Formayer,

Climatology of cut-off low systems in the greater European Alpine region,
Geophysical Research Abstracts, 14, EGU2012-13845, EGU General Assembly 2012, Vienna, Austria, 2012.

N. K. Awan, A. Gobiet, M. Suklitsch, and M. J. Themeßl,
Simulating extreme precipitation events in the Alpine region, presented at the AGU Fall meeting 2010, 13 – 17 December 2010, San Francisco, USA, 13-Dec-2010.

Awan N.K., A. Gobiet, M. Suklitsch,
Representation of climate extremes: A comparative evaluation of CCLM performance in the Alpine region,
5th CLM Community Assembly 2010, 31 August – 3 September, Berlin, Germany**.**

Prein, A.F., A. Gobiet, K.L. Kapper, M. Suklitsch, **N. K. Awan**, H. Truhetz,
Added value of convection resolving climate simulations,
5th CLM Community Assembly 2010, 31 August – 3 September, Berlin, Germany.

Suklitsch M., A. Gobiet, H. Truhetz, **N. K. Awan,** H. Göttel, A. Leuprecht, K. L. Kapper, D. Jacob,
NHCM-1: Non-hydrostatic Climate Models Operated at Very High Resolution: Evaluation, Intercomparison, Variance, and Uncertainty (poster)
NIC-Symposium, 24 – 25 February 2010, Jülich Forschungszentrum (JFZ), Germany.

Awan, N.K., H. Truhetz, A. Gobiet,
Parameterization induced error-characteristics in regional climate models: An ensemble based analysis (poster),
3. Österreichischer MeteorologInnentag, 5-6 November 2009, Graz, Austria.

Awan, N.K., A. Gobiet,
Performance of a cloud resolving model in climate mode (Poster),
High resolution climate modeling, 10-14 August, 2009, International Center for Theoretical Physics, Trieste, Italy.

Gobiet, A., M. Suklitsch, A. Prein, H. Truhetz, **N.K. Awan**, H. Göttel, D. Jacob
On the relative importance of high-resolution dynamical downscaling error components (oral),
MOCA-09: IAMAS, IAPSO and IACS joint assembly, July 19-29, 2009, Montreal, Canada.

Awan, **N.K.,** H. Truhetz and A. Gobiet,
Parameterization induced error-characteristics in Regional Climate Models: An ensemble based analysis (oral and poster),
10th WRF Users Workshop 23-26th June 2009, Boulder, Colorado, USA. Available online at:
http://www.mmm.ucar.edu/wrf/users/workshops/WS2009/WorkshopPapers.php

A. Gobiet, M. Suklitsch, A. Prein, H. Truhetz, **N. K. Awan**, H. Goettel, D. Jacob,
High-resolution dynamical downscaling error components over complex terrain (oral),
2nd Lund Regional-scale Climate Modelling Workshop: 21st Century Challenges in Regional-scale Climate Modelling, Lund, Sweden, 4 - 8 May 2009.

Awan, N.K. and A. Gobiet,
A comprehensive sensitivity analysis of high resolution regional climate simulations with WRF in the European Alpine region (oral), Geophysical Research Abstracts, 11, EGU2009-8118, EGU General Assembly 2009, Vienna, Austria, 2009.

Suklitsch, M., A. Gobiet, H. Truhetz, **N. K. Awan**, H. Göttel and D. Jacob,
Error characteristics of high resolution regional climate simulations in the Alpine Region (oral), Geophysical Research Abstracts, 11, EGU2009-7265, EGU General Assembly 2009, Vienna, Austria, 19-24th April 2009.

Awan, N.K. and F.S. Syed,
Investigation of wind power potential along coastline of Pakistan using a Mesoscale Model,
AS-ICTP/NCP International Conference on Global Change,13-17 November, 2006.

Scientific talks

N.K. Awan,
Turbulence energetics of stably stratified atmospheric flows,
First Split workshop in Atmospheric Physics and Oceanography, 22-31 May, 2009, Split, Croatia.
N.K. Awan,
Convective schemes and there implementations in Numerical Models,
Seminar on regional climate modeling, 28th May 2008, Wegener Zentrum fur Klima und Globalen Wandel, Graz, Austria.
N.K. Awan,
The Global Climate Change: Pakistan's perspective,
July, 2007, T4Science Seminar, Wegener Center for Climate and Global Change, Graz, Austria.
N.K. Awan,
High resolution climate modeling: a full year climate study of Pakistan
Investigation of model performance in Arid and Semi–Arid region model evaluation, use of remote sensing data, and atmospheric process study, June, 2009, Regionaler Klimawandel und Klimamodellierung, Wegener Center for Climate and Global Change, Graz, Austria.

Professional development

Worked in the following projects:
Assimilation of Satellite surface TemperatuRe In weather moDels (ASTRID)
The main goal of this project is to deliver a land surface temperature re-analysis product for the Alpine region.
Seamless probabilistic and deterministic forecast system SEAMLESS
I have been one of the main developers of operational nowcasting system INCA and it's further development for ZAMG.
Satellite driven nowcasting system (SATIN)
Usefulness of of satellite data for nowcasting purposes was shown in comparison with convection permitting NWP models.
CMIP5WRF
It was an extension of Reclip century project with goal of producing highly resolved regional climate scenarios based on RCP85 (2012-2014).
Assessing Climate impacts on Quality and Quantity of Water (ACQWA)
ACQWA was funded by EU FP7 call. My job was to investigate contribution of cut-off low systems to large scale heavy precipitation events causing major flooding in the Alpine region (2011-2013).
Reclip: Century
My job as climate modelling expert was to deliver high resolved climate change scenarios with a resolution of 10 km for the European region (2010-2011).
Non-Hydrostatic Modelling-I (NHCM-1)
In this FWF funded project we explored the role of model physics as an uncertainty source in RCM results (2007-2011).
Wind Mapping Project
This project was focusing on exploring the wind energy potential of coastal regions of Pakistan by downscaling ECMWF's and NCEP re-analysis datasets (2006-2007).
APN-CAPaBLE
Development and Application of Climate Extreme Indices and Indicators for Monitoring Trends in Climate Extremes and their socio-economic Impacts in South Asian countries (2005-2007).

Computational Experience

Certifications and courses

Diploma in Computer Sciences (DCS)

Short course on GIS and its application, on hand experience of ESRI’s solution; ERDAS Imagine 8, ARCGIS, Global Mapper

Programming Languages

NCL, IDL, Python, GDL, R, FORTRAN, C, C++, Shell scripting

Code Development

1. Algorithm for detection of cut-off lows in IDL
2. Diverse model analysis routines and input routines as part of development of Wegner Center

Integrated Climate model Evaluation tool (WICE) in IDL.

3. Contributed in development of WRF and AROME code. Also wrote several data manipulations and pre/post processing routines for those models in C++ and FORTRAN.
4. Monte carlo code for efficiency estimation of scintillator detector in C during M.Phil.

Operating system

Comfortable with LINUX/UNIX and Windows operating systems

Scientific softwares

EXCELLENT:

Latex, CDO, NCO, Grads, Ferret

GOOD:

Scientific Workplace, Matlab

FAIR:

ERDAS Imagine 8, ARCGIS, Global Mapper

Language Proficiency

Excellent: English, Urdu, Punjabi
Good: German
Basic: Arabic

References

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1190 Wien

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1190 Wien

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