

Moetasim Ashfaq

Oak Ridge National Lab
P.O Box 2008 MS6301
Oak Ridge, TN 37831-6301, USA

Telephone (865) 574-6500
Fax (865) 574-6476
Email mashfaq@ornl.gov

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EDUCATION

- 2009 Purdue University, West Lafayette, IN, USA (*Ph.D. in Atmospheric Sciences*)
- 2003 Quaid-i-Azam University, Islamabad, Pakistan (*M.Phil in Computational Physics*)
- 2000 Quaid-i-Azam University, Islamabad, Pakistan (*M.Sc in Physics*)
- 1997 Government College, Lahore, Pakistan (*B.Sc in Mathematics and Physics*)

APPOINTMENTS

- 2011- Computational Climate Scientist, Computer Science and Mathematics Division, Oak Ridge National Lab, Oak Ridge, Tennessee, USA
- 2010-2011 Postdoctoral Research Fellow, Join Institute for Computational Sciences, Oak Ridge National Lab, Oak Ridge, Tennessee, USA
- 2009-2010 Postdoctoral Research Fellow, Department of Environmental Earth System Science, Stanford University, Stanford, California, USA
- 2009 Postdoctoral Research Fellow, Earth and Atmospheric Sciences Department, Purdue University, West Lafayette, Indiana, USA
- 2005-2009 Research Assistant, Earth and Atmospheric Sciences Department, Purdue University West Lafayette, Indiana, USA
- 2004-2007 Short Term Visitor, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy
- 2002-2005 Research Fellow, Global Change Impact Studies Centre, Islamabad, Pakistan

ACADEMIC INTERESTS

Earthsystem Modeling, Climate Change and Variability, Hydrological Cycle

PUBLICATIONS (Total Citations > 1000 (Google scholar))

- Rui, M. M. Ashfaq, D. Rastogi, L. R. Leung, and F. Dominguez, Dominating Controls for Wetter South Asian Summer Monsoon in the 21st Century (2015), *Journal of Climate*, accepted.
- Touma, D., M. Ashfaq, M. A. Nayak, S. C. Kao, and N. S. Diffenbaugh (2014), A Multi-model and Multi-index Evaluation of Drought Characteristics in the 21st Century, *Journal of Hydrology*, in press, doi:10.1016/j.jhydrol.2014.12.011
- Kao, S. C., M. Sale, M. Ashfaq, R. U. Martinez, D. Kaiser, Y. Wei, and N. S. Diffenbaugh (2014), Projecting changes in annual hydropower generation using regional runoff data: an assessment of the United States federal hydropower plants, *Energy*, accepted.
- Kapnick, S. B., T. L. Delworth, M. Ashfaq, S. Malyshev, and P. C. D. Milly (2014), Snowfall less sensitive to warming in Karakoram than in Himalayas due to a unique seasonal cycle, *Nature Geosci*, advance online publication.
- Singh D., D. E. Horton, M. Tsiang, M. Haugen, M. Ashfaq, R. Mei, D. Rastogi., N. C. Johnson, A. Charland, B. Rajaratnam, N. S. Diffenbaugh (2014), Severe Flooding in Northern India in June 2013: Causes, Historical Context, and Changes in Likelihood, *Bulletin of the American Meteorological Society* [in "Explaining Extremes of 2013 from a Climate Perspective"]. *Bull.*

- Amer. Meteor. Soc.*, 95 (9), S58–S61.
- Oubeidillah, A. A., Kao, S.-C., Ashfaq, M., Naz, B. S., and Tootle, G. (2013): A large-scale, high-resolution hydrological model parameter dataset for climate change impact assessment for the conterminous United States, *Hydrol. Earth Syst. Sci.*, 18, 67–84, 2014, doi:10.5194/hess-18-67-2014.
- Ashfaq M., S. Ghosh, S-C Kao, L. C. Bowling, P. Mote, D. Touma, S. A. Rauscher and N. S. Diffenbaugh (2013), Near-term acceleration of hydroclimatic change in the western U.S., *Journal of Geophysical Research*, doi: 10.1002/jgrd.50816
- Leung, L. R., T. Ringler, W. D. Collins, M. Taylor and M. Ashfaq (2013), A Hierarchical Evaluation of Regional Climate Simulations, *Eos Trans. AGU*, 94(34), 297
- Diffenbaugh, N. S., M. Scherer and M. Ashfaq (2013), Continued global warming intensifies snow-dependent hydrologic extremes in the northern hemisphere, *Nature Climate Change*, 3(4), 379–384.
- Skinner, C.B., M. Ashfaq and N.S. Diffenbaugh (2012), Influence of 21st century atmospheric and sea surface temperature forcing on West African climate, *Journal of Climate*, 25(2), 527–542.
- Sale, M. J., S-C. Kao, M. Ashfaq, D. P. Kaier, R. Martinez, C. Webb and Y. Wei (2012), *Assessment of the Effects of Climate Change on Federal Hydropower*, Technical Manual 2011/251, Oak Ridge National Laboratory, Oak Ridge, TN.
- Diffenbaugh N.S., M. Ashfaq, and Martin Scherer, Transient regional climate change: a high-resolution, century-scale, ensemble simulation of climate in the continental United States s, *J. Geophys. Res.-Atmos.*, 116, D24111, doi:10.1029/2011JD016458.
- Diffenbaugh N. S., M. A. White, G. V. Jones, and M. Ashfaq (2011), Climate adaptation wedges: a case study of premium wine in the western United States, *Environ. Res. Lett.*, 6, 024024.
(Press coverage: *CBS News Early Show, ABC7 News, Fox2 News, Wired Magazine, Reuters, NPR Science Friday, Discovery News, UPI, Huffington Post, Wine Spectator, Yahoo News, Los Angeles Times, Napa Valley Register, Santa Rosa Press-Democrat, KQED*)
- Ashfaq, M., L. C. Bowling, K. Cherkauer, J. S. Pal, and N. S. Diffenbaugh (2010), Influence of climate model biases and daily-scale temperature and precipitation events on hydrological impacts assessment: A case study of the United States, *J. Geophys. Res.-Atmos.*, 115, D14116, doi:10.1029/2009JD012965.
- Diffenbaugh, N. S., and M. Ashfaq (2010), Intensification of hot extremes in the United States, *Geophys. Res. Lett.*, 37, L15701, doi:10.1029/2010GL043888.
(Press coverage: *Stanford News, New York Times Green, New York Times Dot Earth, USA Today, Los Angeles Times, Washington Post, San Francisco Chronicle, Chicago Tribune, Boston Globe, Business Week, AOL News, Scientific American, Smithsonian Magazine, Salon.com, CBS News, ABC News, NPR On Point Radio, Progressive Radio Network, Democracy Now Television*)
- Ashfaq, M., C.B. Skinner, N.S. Diffenbaugh (2010), Influence of SST biases in future climate projections, *Climate Dynamics*, doi: 10.1007/s00382-010-0875-2.
- Ashfaq, M., Y. Shi, W. Tung, R. J. Trapp, X. Gao, J. S. Pal, and N. S. Diffenbaugh (2009), Suppression of south Asian summer monsoon precipitation in the 21st century, *Geophys. Res. Lett.*, 36, L01704, doi:10.1029/2008GL036500.
(Press Coverage: *USA Today, YahooNews, UPI, Radio Australia News, The Times of India, The Economic Times, The Tehran Times, Channel News Asia, Daily Times Pakistan, The Dawn Pakistan, The Daily Star Bangladesh, Wall Street Journal Market Watch, L'Espresso France, Tribune De Geneve, Australia News Network, Science Centric, Science Daily, Economic Times, News Asia, The Telegraph*)
- Pal, J.S., F. Giorgi, X. Bi, N. Elguindi, F. Solmon, X. Gao, S.A. Rauscher, R. Francisco, A. Zakey, J. Winter, M. Ashfaq, F.S. Syed, J.L. Bell, N.S. Diffenbaugh, J. Karmacharya, A. Konare, D. Martinez, R.P. da Rocha, L.C. Sloan, and A. Steiner (2007), Regional climate modeling for the developing world: The ICTP RegCM3 and RegCNET, *Bulletin of the American Meteorological Society*, 88(9), 1395–1409.
- Diffenbaugh, N.S., and M. Ashfaq (2007), Response of California Current forcing to mid-Holocene changes in insolation and sea surface temperature, *Paleoceanography*, 22, PA3101, doi:10.1029/2006PA001382.

FUNDED RESEARCH PROJECTES

Towards the Development of an Integrated Energy-Water Risk Assessment Tool for Probable Maximum Precipitation and Flood (Oct 2013-Sep 2015), funded by Laboratory Directed Research and Development (LDRD) Program, US 0.720 Million, **Co-Principal Investigator**

A Hierarchical Regional Modeling Framework for Decadal-Scale Hydro-climatic Predictions and Impact Assessments (Oct 2011 – Sep 2013), funded by Laboratory Directed Research and Development (LDRD) Program, US 0.725 Million, **Principal Investigator**

Development of Frameworks for Robust Regional Climate Modeling (Oct 2010 - Sep 2013), funded by U.S. Department of Energy Biological and Environmental Research (DOE-BER), US 1.2 Million, **Site-Principal Investigator**

PEER REVIEWS

Journals Manuscript (18 Journals): *Nature Climate Change, Water Resources Research, Geophysical Research Letters, Meteorology and Atmospheric Physics, Journal of Climate, Climate Dynamics, Climate Research, Atmospheric Science Letters, International Journal of Climatology, Journal of Hydrometeorology, Climatic Change, Journal of Geophysical Research, Stochastic Environmental Research and Risk Assessment, Natural Hazards, Journal of Environmental Management, Journal of Earth System Science, Journal of Applied Meteorology and Climatology, Dynamics of Atmospheres and Oceans*

Science Proposals: *US National Science Foundation, US Civil Research and Development Foundation (CRDF)- Global, US Department of Energy*

Others: *DISsertations initiative for the advancement of Climate Change ReSearch (DISCCRS) (Symposium Applications Reviewer)*

SYNERGISTIC ACTIVITIES

Visiting Scientist: *Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, Visiting Scientist for Developing Countries (2012-2014)*

Guest Editor: *Special issue on “Regional hydroclimate variability and change” in British Journal of Environment and Climate Change*

Collaborations: *Noah Diffenbaugh (Stanford), Chris Skinner (Stanford), Deepti Singh (Stanford) Laura Bowling (Purdue), Subimal Ghosh (IITM, Bombay, India), Peter Good (UK Met Office), Shieh-Chieh Kao (ORNL), Sara Rauscher (UDEL), Phil Mote (COAS Oregon State), Sarah Kapnick (Princeton/GFDL), Bibi Naz (ORNL), Abdul Oubeidillah (University of Alabama), Joshua Fu (University of Tennessee, Knoxville), Ruby Leung (PNNL)*

Mentor: *Rui Mei (Postdoc), Danielle Touma (Postmasters), Mariya Absar (Postmasters), Deeksha Rastogi (Postmasters)*

Member: *American Meteorological Society, American Geophysical Union*

Science Media: *Disseminating Climate Science to the non-scientists since 2009*