
Moetasim Ashfaq

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EDUCATION

Purdue University, West Lafayette, IN, USA Ph.D. in Earth and Atmospheric Sciences (<i>Current GPA 3.86/4.0</i>)	In progress
Quaid-i-Azam University, Islamabad, Pakistan M.Phil in Computational Physics	2003
Quaid-i-Azam University, Islamabad, Pakistan M.Sc in Physics	2000
Government College, Lahore, Pakistan B.Sc in Mathematics and Physics	1998

APPOINTMENTS

- Research Assistant, Earth and Atmospheric Sciences Department, Purdue University 2005-
- Short Term Visitor, Abus Salam International Centre for Theoretical Physics, Trieste, Italy Jun-July 2007
- Short Term Visitor, Global Change Impact Studies Center, Islamabad, Pakistan Jul-Aug 2006
- Short Term Visitor, Abus Salam International Centre for Theoretical Physics, Trieste, Italy May-Jun 2006
- Research Fellow, Global Change Impact Studies Center, Islamabad, Pakistan 2002- 2005
- Visiting Scientist, Abus Salam International Center for Theoretical Physics , Trieste, Italy Mar-Jun 2005
- Short Term Visitor, Abus Salam International Centre for Theoretical Physics, Trieste, Italy May-Jun 2004

ACADEMIC INTERESTS

Regional Climate Modeling, Climate Change, Hydrological Cycle

PUBLICATIONS

- **Ashfaq, M.**, S. Ying, W.-w. Tung, R. J. Trapp, X. Gao, J. S. Pal, Noah S. Diffenbaugh, Suppression of South Asian summer Monsoon precipitation in 21st century, *Geophysical Research Letters*, in revision.
- Harshvardha, Noah S. Diffenbaugh, **M. Ashfaq**, Ying Shi, Paul B. Shepson, Future Changes in Air Stagnation in the United States and South Asia, *Journal of Geophysical Research-Atmosphere*, submitted, June 2008.
- **Ashfaq, M.**, L.C. Bowling, J. S. Pal, Noah S. Diffenbaugh, Coupling of a hydrological Model (VIC) with a high resolution regional climate model (RegCM3) for climate change studies , in preparation.

- Shuman B., John W Williams, Noah S. Diffenbaugh, **M. Ashfaq**, Patrick J Bartlein The Effects of Insolation and Soil-Moisture Behavior on Moisture Patterns and Variability in the Central United States during the Mid-Holocene, *Quaternary Science Reviews*, in revision.
- Pal, Jeremy S., F. Giorgi, X. Bi, N. Elguindi, F. Solmon, X. Gao, Sara 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, Regional climate modeling for the developing world: The ICTP RegCM3 and RegCNET, *Bulletin of the American Meteorological Society*, 88(9), 1395-1409, 2007.
- Diffenbaugh, Noah S., and **M. Ashfaq**, Response of California Current forcing to mid-Holocene changes in insolation and sea surface temperature, *Paleoceanography*, 22, PA3101, doi:10.1029/2006PA001382, 2007.
- Diffenbaugh, Noah S., **M. Ashfaq**, B. Shuman, J.W. Williams, P.J. Bartlein and L.C. Sloan, Summer precipitation in United States: Response to Mid Holocene changes in insolation, ocean mean-state, and ocean variability, *Geophysical Research Letters*, 33, L22712, doi: 10.1029/2006GL028012, 2006.

PRESENTATIONS

- **Ashfaq M.** and Noah S. Diffenbaugh, Dynamics governing 21st century South Asian summer monsoon changes in a multi-member CAM3 ensemble experiment, 13th Annual CCSM Workshop, June 17-19, 2008, Breckenridge, CO.
- **Ashfaq, M.**, W.-w. Tung, S. Ying, R. J. Trapp, X. Gao, J. S. Pal, Noah S. Diffenbaugh, Suppression of South Asian summer monsoon in the 21st century, Grad Student Expo, Feb 2008, EAS Purdue University.
- **Ashfaq, M.**, W.-w. Tung, S. Ying, R. J. Trapp, X. Gao, J. S. Pal, Noah S. Diffenbaugh, South Asian summer monsoon dynamics in a high resolution nested climate model, American Geophysical Union Fall Meeting, Dec 10-14, 2007, San Francisco, CA.
- Diffenbaugh, Noah S., and **M. Ashfaq**, Response of California Current forcing to mid-Holocene changes in insolation and sea surface temperature, American Geophysical Union Fall Meeting, Dec 10-14, 2007, San Francisco, CA.
- **Ashfaq, M.**, S. Ying, R. J. Trapp, X. Gao, J. S. Pal, Noah S. Diffenbaugh, South Asian summer monsoon dynamics in a high resolution nested climate model, NSF Climate and Land-surface Workshop, Oct 1-3, 2007, Boulder, CO.
- **Ashfaq, M.**, L.C. Bowling, J.S. Pal, Noah S. Diffenbaugh, Coupling of a hydrological Model (VIC) with a high resolution regional climate model (RegCM3) for climate change studies, 1st HP-Community Poster Session, April 5, 2007, West Lafayette, IN.
- **Ashfaq, M.**, S. Ying, X. Gao, W.-w. Tung, J. S. Pal, Noah S. Diffenbaugh, South Asian Monsoon in a Warming World, EAS 40th Anniversary Symposium, April 13, 2007, Purdue University, West Lafayette, IN.
- **Ashfaq, M.**, L.C. Bowling, J.S. Pal, Noah S. Diffenbaugh, Coupling of a hydrological Model (VIC) with a high resolution regional climate model (RegCM3) for climate change studies, American Geophysical Union Fall Meeting, Dec 11-15, 2006, San Francisco, CA.
- Diffenbaugh, Noah S., **M. Ashfaq**, B. Shuman, J.W. Williams, P.J. Bartlein and L.C. Sloan, Summer aridity in the United States: Response to mid-Holocene changes in insolation, ocean mean-state, and ocean variability, American Geophysical Union Fall Meeting, Dec 11-15, 2006, San Francisco, CA.
- Shuman, B.N., J.W. Williams, N.S. Diffenbaugh, P.J. Bartlein and **M. Ashfaq**, Seasonal moisture patterns in North America during the mid-Holocene: Diagnosing the mechanisms of change, American Geophysical Union Fall Meeting, Dec 11-15, 2006, San Francisco, CA.
- **Ashfaq, M.**, L.C. Bowling, J.S. Pal, N.S. Diffenbaugh, Climate Change impacts on regional hydrology, ASICTP/NCP International Conference on Global Change, Nov 13-17, 2006, Islamabad. *INVITED*
- **Ashfaq, M.**, Seasonal predictability of the South Asian Monsoon, Jul 2006, Global Change Impact Studies Centre, Islamabad, Pakistan. *INVITED*

- **Ashfaq, M.**, J.S. Pal, Effect of domain size, resolution and model biases in regional climate simulations, Third Workshop on the Theory and Use of Regional Climate Models, May 29-Jun 9, 2006, Trieste, Italy. *INVITED*
- **Ashfaq, M.**, Downscaling of regional climate models' output for hydrological modeling, APN CAPaBLE South Asia Regional Training Workshop on Watershed Modeling, Mar 9-20, 2005, Islamabad, Pakistan. *INVITED*
- **Ashfaq, M.**, A.M. Khan, Role of Physics in climate change studies, International Workshop on Year of Physics, Feb 21-22, 2005, Islamabad, Pakistan.
- **Ashfaq, M.**, J.S. Pal, High resolution regional climate simulations over the Himalayas: A comparison of one-way nesting approaches using RegCM3 and MM5, Workshop on Regional Climate Modeling and Mini-Symposium on Climate Change in Europe, Nov 29-Dec 3, 2004, Prague, Czech Republic.

AWARDS

- International Travel Award, 2008, College of Science, Purdue University, West Lafayette, IN.
- AGU Travel Award, 2007, EAS Purdue University, West Lafayette, IN.
- Runner-up Award 1st HP-Community poster session, Apr 5, 2007, Purdue University, West Lafayette, IN, USA.
- Best Performance Award in 2004, Global Change Impact Studies Centre, Islamabad, Pakistan.
- Travel Support, ASICTP/NCP International Conference on Global Change, Nov 13-17, 2006, Islamabad, Pakistan.
- Travel Support, Third ASICTP Workshop on the Theory and Use of Regional Climate Models, May 29-Jun 9, 2006, Trieste, Italy.
- Travel Support, Workshop on Regional Climate Modeling and Mini-Symposium on Climate Change in Europe, Nov 3-Dec 29 2004, Prague, Czech Republic.
- Travel Support, Regional Training Workshop on the Use of Hadley Centre Regional Climate Model, PRECIS, Jul 20-24, 2004, Thimpu, Bhutan.
- Travel Support, Second ASICTP Workshop on the Theory and Use of Regional Climate Models, May 29-Jun 10, 2004, Trieste, Italy

MANUSCRIPT REVIEWS (Journal)

- Water Resources Research

RESEARCH EXPERIENCE

Team member of APN-CAPaBLE Project

Worked as a team member in APN-CAPaBLE project on 2003 – 2005
Enhancement of national capacities in the application of simulation models for the assessment of climate change and its impacts on water resources, food and agricultural production

Surface-Atmosphere Feedbacks and Holocene Climate Variations in Eastern North America: Linkages, Impacts, and Governing Mechanisms

Worked on the CCSM (T85,T42)-RegCM3 interface and inclusion of orbital code in RegCM3 for Paleoclimate simulations. 2005 – Present

RegCM3 Users Network

Continued support for RegCM3 users in RegCNET-SA (South Asian User Network) and RegCNET (World Wide Users Network) 2003-present

Code Development

Developed: 1) Monte Carlo Stochastic Simulation Code 2) 2002-present
RegCM3-MM5 interface 3) RegCM3-VIC interface 4) Spectral
analysis code for RegCM3 data analysis 5) Masking in Sub-
gridding scheme in RegCM3 Land-surface model (BATS) 6)
RegCM3-CCSM (T85/T42) interface 7) RegCM3-ERA40(T85)
interface 8) Revised RegCM3 Post-Processing Code 9) Revised
RegCM3-NNRP2 Interface.

SOFTWARE EXPERTISE

Excellent: Ferret, Grads, Parallel Computing, Fortran
Programming, NCL
Good: EXCEL, SPSS, MINITAB, SDSM, Vis5D
Fair: Matlab, GEMPAK, ArcView, Front-Page,
Macromedia Flash, Mathematica

MEMBERSHIPS

- American Physical Society, 2005 -
- American Geophysical Union, 2005 -

Last Updated July 2008