

Scopus hindex:7 google scholar: 9 Citation: 308

EDUCATION

- PhD (2008) **Physical Geography (Climatology)**, Tarbiat Modares University, Tehran, Iran. Dissertation: *The analysis of summertime subtropical anticyclone over Iran*. Advisor: Professor Hooshang Ghaemi
- MA (2000) **Physical Geography (Hydro-Climatology)**, Tarbiat Modares University, Tehran, Iran. Thesis: *The modeling of rainfed wheat productivity regarding to Agroclimatic parameters in West Azarbaijan province*. Advisor: Dr. Manoochehr Faradjzadeh
- BA (1997) **Teaching Geography**, Kharazmi University, Tehran, Iran

ACADEMIC POSITIONS

- Sep 2011 – now **Assistant professor**
Ferdowsi University of Mashhad, Mashhad, Iran
- Sep 2009 – Sep 2011 **Postdoctoral Research Associate**
Center for Climatic Research, UW-Madison, Madison, WI, USA
- Dec 2008 – Aug 2009 **Postdoctoral Visiting Scientist**
Research Applications Laboratory, NCAR, Boulder CO, USA
- Sep 2003 – Sep 2008 **Instructor**
Department of Geography, Tabarestan Institute of Higher Education, Iran
- Sep 2006 – Feb 2007 **Visiting Instructor**
Department of Geography, Zanjan University, Iran

RESEARCH INTERESTS

- Regional and Meso-scale Climate Modeling
- Climate Variability and Change
- Synoptic Climatology of Middle East
- Subtropical Anticyclones
- Climatology of Arid Lands

TEACHING INTERESTS

COURSES TAUGHT

Ferdowsi University of Mashhad (FUM)

- Microclimatology
- Dynamic Climatology

- Fundamentals of Climatology I & II
- Programming & climate softwares
- Hydro-climate Modelling
- Regional Climate Modelling
- Meso-scale Climate Modelling

Tarbiat Modarres University

- Climate Modelling
- Regional Climate Modelling

Sistan and Baluchistan University

- Climate Modelling

Tabarestan Institute of Higher Education

- Fundamentals of Climatology
- Computer Application in Geography
- Microclimatology
- Statistics for Geography
- Water Resources of Iran
- Urban Hydrology
- Introduction to Hydrology

Zanjan University

- Microclimatology
- Fundamentals of Climatology
- Iran Climatology
- Introduction to Meteorology

PUBLICATIONS

A. Papers

- Salehnia N., Hosseini, F., Farid, A., Kolsoumi,S., Zarrin, A., Hasheminia, M., 2019: Comparing the performance of dynamical and statistical downscaling on historical run precipitation data over a semi-arid region, *Asia-Pacific Journal of Atmospheric Sciences*, 1-13

- Salehnia, N., Alizadeh, A., Sanaeinejad, H., Zarrin, A. 2018: Estimation of meteorological drought indices based on AgMERRA precipitation data and station-observed precipitation data, *Journal of Arid Land* (2017) 9: 79.doi: 10.1007/s40333-017-0070-y

Salehnia , N., Alizadeh A., Sanaeinejad H., Bannayan M., Zarrin, A., 2017, Investigating the Output of Numerical Prediction Models under RCP4.5 Scenario for Forecasting Meteorological Droughts. *Iranian Journal of Irrigation and Drainage*. No. 6, Vol. 12, Feb.-Mar.2019, p. 1315-1326

- Najafi, M.S., Sarraf, B.S., Zarrin, A., and Rasouli, A.A., 2017: Climatology of atmospheric circulation patterns of Arabian dust in western Iran, *Environ. Monit. Assess.*, 189 (9): 473. 13pages. Doi: 10.1007/s10661-017-6196-8.
- Kamali, S., Mofidi, A., Zarrin, A. and Nazaripour, H., 2017: Sensitivity studies of the forth-generation regional climate model simulation of dust storms in the Sistan plain, Iran, *Model. Earth Syst. Environ.*, 3 (2): 769-781. doi: 10.1007/s40808-017-0333-9.
- Sari Sarraf, B., Rasouli, A.A., Zarrin, A., and Najafi, M.S., 2017: Analysis of vertical distribution patterns of Dust Storms associate with atmospheric circulation patterns and topography in western Iran, *Physical Geography Research Quarterly*, 49 (2): 169-189.
- Karkhaneh, M., Mofidi, A., and Zarrin, A., 2016: Modeling the role of Caspian Sea on the occurence of regional-scale precipitation in the Caspian Sea Region, *Geography and Territorial Spatial Arrangement*, 18: 153-168.
- Mofidi, M., Soltanzadeh, I., Yousefi, Y., Zarrin, A., Soltani, M., Masompour, J., Azizi, GH., and Miller, S., 2015: Modeling the exceptional south Foehn event (Garmij) over Alborz Mountains during the extreme forest fires of December 2005, *Natural Hazards*, 75 (3): 2489-2518. doi: 10.1007/ s11069-014-1440-9.
- Mofidi, A., Zarrin, A., and Karkhaneh, M., 2014: The investigation of atmospheric circulation pattern during wet and dry spells over southern coast of the Caspian Sea, *Iranian Journal of Geophysics*, 8 (1): 140-176.
- Vavrus, S., Notaro, M., and Zarrin, A., 2013: The Role of Ice Cover in Heavy Lake-Effect Snowstorms over the Great Lakes Basin as Simulated by RegCM4. *Monthly Weather Review*, 141(1): 148-165.
- Notaro, M., Zarrin, A., Vavrus, S., and Bennington, V., 2013: Simulation of heavy lake-effect snowstorms across the Great Lakes basin in RegCM4: Synoptic climatology and variability. *Monthly Weather Review*, 141(6): 1990-2014.
- Notaro, M., K. Holman, A. Zarrin, E. Fluck, S. Vavrus, and V. Bennington, 2013: Influence of the Laurentian Great Lakes on regional climate. *Journal of Climate*, 26: 789–804.
- Holman, K. D., A. D. Gronewold, M. Notaro, and A. Zarrin, 2012: Improving historical precipitation estimates around the Lake Superior watershed, *Geophysical Research Letters*, 39: L03405, doi:10.1029/2011GL050468.
- Mofidi, A., Kamali, S., and Zarrin, A., 2013: Evaluation of the RegCM4 model coupled with Dust module on identification of dust storm features over the Sistan region, *Quarterly of Geography and Regional Planning*, 3 (3): 51-69.
- Mofidi, A., Zarrin, A., and Janbaz Ghobadi, G., 2012: The Causes of Decreasing in the Amount and Intensity of Winter Rainfall in Comparison to the Fall Rainfall in Southern Coast of Caspian Sea, *Journal of Earth and Space Physics*, 38 (1): 177-203.

- Mofidi, A., and Zarrin, A., 2012: Investigating the Nature, Structure and Temporal Variation of Summertime Atmospheric Circulation over Southwest Asia. *Journal of Climate Research*, 11: 15-40.
- Zarrin, A., Ghaemi, H., Azadi, M., Mofidi, A., and Mirzaei, E., 2011, The effect of Zagros Mountains on the formation and maintenance of Iran anticyclone using RegCM4. *Meteorology and Atmospheric Physics*, 112(3-4): 91-100, DOI: 10.1007/s00703-011-0134-z.
- Janbaz Ghobadi, G., Mofidi, A., and Zarrin, A., 2011, Determining the Synoptic Pattern of Winter Heavy Precipitation in Southern Coast of Caspian Sea. *Geography and Environmental Planning Journal*, 22(2): 23-40.
- Notaro, M., and A. Zarrin, 2011: Sensitivity of the North American monsoon to antecedent Rocky Mountain snowpack. *Geophysical Research Letters*, 38: L17403, doi:10.1029/2011 GL048803
- Zarrin, A., Ghaemi, H., Azadi, M., and Farajzadeh, M., 2010, Analysis of the spatial pattern of summertime subtropical anticyclones over Asia and Africa, *A Climatological Review, International Journal of Climatology*, 30(2): 159-173.
- Razinei, T., Mofidi, A., and Zarrin, A., 2009, The 500 hPa Action Centers and Winter Circulation Patterns over the Middle East and their Relationship with Precipitation in Iran, *Journal of Earth and Space Physics*, 35(1): 121-141.
- Mofidi, A., Zarrin, A., and Janbaz Ghobadi, G., 2008, Determining the Synoptic Pattern of Autumn Heavy and Extreme Precipitation in Southern Coast of Caspian Sea, *Journal of Earth and Space Physics*, 33(3): 131-154.
- Mofidi, A., and Zarrin, A., 2006, The Analysis of the Nature and Structure"of High and Low Pressure Systems; Part A, Roshd; *Teaching Geology*, 46: 53-61. Part B, Roshd; *Teaching Geology*, 47: 54-58.
- Mofidi, A., and Zarrin, A., 2006, Synoptic Investigation of the Influence of Sudan Low Pressure Systems on Heavy Rainfalls in Iran, *Geographical Research Quarterly*, 77: 113-136.
- Zarrin, A., and Mofidi, A., 2006, Variability of Solar Activity and its Influence on the Earth's Climate: Case Study; Middle East and Iran, *Quarterly Geographical Journal of Territory*, 2 (8): 83-104.
- Mofidi, A., and Zarrin, A., 2005, Synoptic analysis of the nature of Sudan Low Pressure Systems (Case Study; December 2001 Storm), *Quarterly Geographical Journal of Territory*, 2(6): 24-48.
- Farajzadeh, M., and Zarrin, A., 2002, The modeling of rainfed wheat Yield products based on Agricultural climatic parameters in West Azarbaijan province-Iran, *Modares Human Sciences*, 6(2): 77-96.

B. Book

- Ghaemi, H., Zarrin, A., and Khosh-akhlagh, F., 2012, *Arid Zones Climatology*, SAMT, 1st edition, Tehran, 420p. (In Farsi)

CONFERENCES

- Moosavi, S.M., Zarrin, A., Mofidi, A., and Hosseini, S.F., 2017: *Investigating the relation between frequency of thunderstorms and temperature trend in Mashhad*, 1st International and 8th National Conference on Urban Planning and Management, April 25-26, 2017, Ferdowsi University of Mashhad, Mashhad, Iran.

- Farashiani, M., Zarrin, A., and Mofidi, A., 2017: *Investigation of Mashhad temperature circumstance at the end of 21st century due to global warming*, 1st International and 8th National Conference on Urban Planning and Management, April 25-26, 2017, Ferdowsi University of Mashhad, Mashhad, Iran.

- Zargari, M., Mofidi, A., and Zarrin, A., 2015: *The influence of atmospheric circulation on the occurrence of extremely high air pollution episodes in the city of Tehran*, The First National Congress on development and promotion of Agricultural sciences, Natural Resources and Environmental Sciences, October 03, 2015, Tehran, Iran.

- Zargari, M., Mofidi, A., and Zarrin, A., 2015: *Synoptic analysis of extremely high pollution days in the city of Tehran*, The 1st International Conference on Geographical Sciences (ICGS2015), August 06, 2015, Shiraz, Iran.

- Gerami, M.S., Mofidi, A., and Zarrin, A., 2015: *Spatial analysis on the relation between Springtime rainfall occurrence in Northwest of Iran and regional scale atmospheric circulation*, First National Congress on Iran's Irrigation and Drainage, Iranian Association of Irrigation and Drainage, May 13-14, 2015, Ferdowsi University of Mashhad, Mashhad, Iran.

- Hasani, S., Mofidi, A., and Zarrin, A., 2015: *Investigating the structure of Shamal Wind and its induced dust using a Regional Climate Model (RegCM4)*, The First National Conference on Meteorology, Iranian Meteorological Society, April 22-23, 2015, University of Yazd, Yazd, Iran.

- Mofidi, A., and Zarrin, A., 2013: *Numerical Modeling of the exceptional South Foehn event over Alborz Mountains during December 2005 extreme forest fire; A Meso-Scale Approach*, Second International Conference on Environmental Hazards, October 29-30, 2013, Kharazmi University, Tehran, Iran.

- Mofidi, A., Kamali, S., Zarrin, A., 2013: *Evaluation of the RegCM4 model coupled with Dust module on identification of dust storm features over the Sistan region*, The First National Conference on Climatology of Iran, May 21-22, Graduate University of Advanced Technology, Kerman, Iran.

- Mofidi, A., Karkhaneh, M., Zarrin, A., 2013: *Simulating the role of Caspian Sea on the occurrence of regional scale precipitation using a regional climate model*

(RegCM4) coupled with a Lake model, The First National Conference on Climatology of Iran, May 21-22, Graduate University of Advanced Technology, Kerman, Iran.

- Mofidi, A., and Zarrin, A., 2012: *Investigating the structure of summer atmospheric circulation over Southwest Asia*, 92nd Annual Meeting of American Meteorological Society, January 22-26, New Orleans, LA, USA.

- Zarrin, A., Notaro, M., and Vavrus, S., 2012: The Simulation of Heavy Lake-Effect Snowstorms Across the Great Lakes Basin Using a Regional Climate Model (RegCM4), 92nd Annual Meeting of American Meteorological Society, January 22-26, New Orleans, LA, USA.

- Bennington, V., Notaro, M., Zarrin, A., Vavrus, S., Lofgren, B., 2012, *How do the Laurentian Great Lakes water levels respond to climate change? A regional climate study*, 2012 Ocean Sciences Meeting, 20-24 February 2012, Salt Lake City, Utah, USA (Oral)

- Vavrus, S., Notaro, M., Zarrin, A., 2011, The Simulation of Heavy Lake-Effect Snowstorms across the Great Lakes Basin in the RegCM4 Regional Climate Model, American Geophysical Union, Fall Meeting 2011, 5-9 Dec 2011, San Francisco, California, USA, abstract #A31K-04 (Oral)

- Zarrin, A., and Mofidi, A., 2011: Does summertime subtropical anticyclone over Iran is an extension of Azors High? "The investigation of a theory", 11th Congress of Iranian Geographers, September 15-16, Shahid Beheshti University, Tehran, Iran.

- Mofidi, A., Zarrin, A., and Fasullo, J., 2010: *Summertime Atmospheric Circulation over Southwest Asia and Its Temporal Variability during the Second Half of the 20th Century*, 4th Regional Climate Change Conference, December 20-22, Tehran, Iran.

- Zarrin, A., Ghaemi, H., Azadi, M., Farajzadeh, M. and Mofidi, A., 2009: *The Effects of Zagros Mountain on Iran summertime subtropical anticyclone*. 105th Annual meeting of the Association of American Geographers, March 22-27, 2009, Las Vegas, Nevada, USA.

- Mofidi, A., Alijani, B., and Zarrin, A., 2009: *The Structure of Summer Atmospheric Circulation over Southwest Asia*. 105th Annual meeting of the Association of American Geographers, March 22-27, 2009, Las Vegas, Nevada, USA.

- Mofidi, A., Zarrin, A., and Janbaz Ghobadi, G., 2008: *Determining the Synoptic Pattern of Winter Heavy Precipitation and it's Comparison to Autumn Heavy Precipitation in Southern Coasts of Caspian Sea*, The 1st International Conference on the Caspian Region Environmental Changes, August 24-25, 2008, University of Mazandaran, Babolsar, Iran.

- Mofidi, A., Zarrin, A., and Janbaz Ghobadi, G., 2007: *Synoptic Investigation of Autumn Heavy Rainfalls in Southern Coasts of Caspian Sea*, Conference of Natural Resources and Sustainability in Southern Coasts of Caspian Sea, March 7, 2007, Noor Azad University, Noor, Iran.

- Zarrin, A., and Sahraei, T., 2005: *Investigation of Climatic Comfort in Noor region*, The 1st Conference of Strategies for Regional Development of Noor, May 12, 2005, Noor Azad University, Noor, Iran.

INVITED ACTIVITIES

- 05-2013 “*Dynamical Downscaling in Regional Climate Models; Issues and Challenges*”. The First National Conference on Climatology of Iran, May 21, Graduate University of Advanced Technology, Kerman, Iran. (Keynote Speaker)
- 06-2009 “*The Effect of High Mountain Thermal Forcing on the Formation of Subtropical Anticyclones over the Middle East*”, Center for Climatic Research, University of Wisconsin-Madison, June 12, Postdoctoral Lecture.
- 07-2005 “*The Nature of Summer Subtropical Anticyclones*”, Department of Geography, Zanjan University, July 6, Zanjan, Iran, Invited Lecture.

Workshops

- 11-2018 “A workshop on Climate modelling and issues”, Kharazami University, November 24, Tehran, Iran. (Instructor)
- 05-2018 “A workshop on the Weather Research and Forecasting (WRF) Model”, Department of Geography, Ferdowsi University of Mashhad, May 20-21, Mashhad, Iran. (Instructor)
- 05-2017 “A workshop on NCAR COMMAND LANGUAGE (NCL)”, Department of Geography, Ferdowsi University of Mashhad, May 10, Mashhad, Iran. (Instructor)
- 05-2016 “A workshop on the Weather Research and Forecasting (WRF) Model”, Department of Geography, Ferdowsi University of Mashhad, May 17-18, Mashhad, Iran. (Instructor)
- 11-2015 “Regional Climate Modeling (RegCM4) Workshop”, Department of Geography, Ferdowsi University of Mashhad, November 03-04, Mashhad, Iran. (Instructor)
- 05-2015 “A workshop on dynamical downscaling and its application in climate studies”, 1st National Congress on Iran’s Irrigation and Drainage, Iranian Association of Irrigation and Drainage, May 12, Ferdowsi University of Mashhad, Mashhad, Iran. (Instructor)
- 11-2013 “Regional Climate Modeling (RegCM4) Workshop”, Department of Geography, Ferdowsi University of Mashhad, November 05 -06, Mashhad, Iran. (Instructor)

- 11-2012 “Regional Climate Modeling (RegCM4) Workshop”, Department of Geography, University of Tehran, November 07-08, Tehran. (Instructor)
- 10-2012 “Gridded Data processing using GrADS; A Tutorial”, School of Geographical Sciences, Kharazmi University, October 13, Tehran. (Instructor)
- 11-2011 “Regional Climate Modeling (RegCM4) Workshop”, Geography Department, Ferdowsi University of Mashhad, November 9-10, A Tutorial (Instructor)
- 01-2011 “Regional Climate Modeling (RegCM4) Workshop”, Center for Climatic Research, University of Wisconsin-Madison, January 13, A Tutorial (Instructor)
- 09-2008 “The Grid Analysis and Display System (GrADS) Workshop”, Department of Geography, University of Tehran, September 26, Tehran, Iran, Invited Instructor.

AWARDS AND HONORS

2015 –DEHKHODA Award for Best book, Arid Climatology, 2014, SAMT

2018 – Review Editor of Chapter 2, IPCC Sixth assessment report

COMPUTER SKILLS

CLIMATE MODELING EXPERIENCE

Regional Climate Model (RegCM), Weather Research and Forecast Model(WRF)

SOFTWARE EXPERIENCE

Parallel Computing, FORTRAN Programming, UNIX Shell scripting
GrADS, NCL, NCO, IDV, SPSS