Anahita Amiri Farahani, Ph.D.

Postdoctoral Fellow
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Environmental Researcher | Air Quality Modeler | Data Analyst

Dedicated Environmental Scientist with a strong concentration and success as a data-driven researcher with an analytical and mathematical mindset. Exemplary academic qualifications include a Ph.D. in Geological Sciences, from the University of California Riverside (2018) as well as B.Sc. and M.Sc. degrees in Physics and Meteorology respectively. Advanced abilities in data analysis, utilizing statistical software, and programming languages such as MATLAB, Python, R, FORTRAN, and NCL. Knowledgeable in database management concepts and tools (MySQL). Comprehensive experience with atmospheric modelling and evaluating models' predictions (e.g., CESM and WRF-Chem).

EXPERIENCE

Sep 2019-Present

Postdoctoral Fellow, Department of Climate and Space Sciences, University of Michigan | Ann Arbor, MI
- Develop a coupled meteorology-particle model (WRF-Chem) to simulate the aerosols emission, transport and deposition processes over the Great Lakes.
- Update the wind-dependent aerosol fluxes with laboratory observations

Dec 2018-Sep 2019

Postdoctoral Scholar, Department of Environmental Sciences
UC Riverside | Riverside, CA
- Conducting research on atmospheric trace gases and air quality using satellite-based data and climate models (GEOS-Chem and MOZART)
- Designing and performing model simulations to investigate the impact of anthropogenic aerosol forcing on global and regional precipitation using CAM
- Analyzing the relationship between meteorological conditions and precipitation

Sep 2013-Jun 2018

Research/Teaching Assistant and Lab Instructor, UC Riverside | Riverside, CA
- Courses: Earth's climate through time (GEO11), Global climate change and sustainability (GEO04), and Oceanography (GEO09)
- Modeling the semi-direct effects using NCAR CAM driven by observationally constrained aerosol forcing on the Yellowstone supercomputer

Sep 2015-Jan 2016

Visiting Doctoral Exchange, ETH Zurich | Zurich, Switzerland
- Analyzing "Impact of dust on low-level clouds" using several satellite datasets like cloud and radiation data (CERES), and dust height (CALIPSO)

July 2010-Oct 2012

Researcher, Department of Geography | Giessen University, Germany
- Performing statistical analysis of extreme events due to climate change by modeling monthly maxima of daily precipitations over Germany
- Identifying the large scale predictors for local daily precipitation

Jan 2008-June 2010

Project Assistant, Atmosphere Sciences and Meteorological Research Center, Iran
- Developed "Data assimilation of WRF model for Iran"

Sep 2009-Dec 2009

Instructor and supervisor, Applied Science and Technology University | Tehran, Iran
- Instructor of "Applied Climatology"
- Supervised two B.Sc. projects at Applied Science and Technology University titled: "Climate change and its effect on human health and environment" and "North Atlantic Oscillation and its influence on Iran"

EDUCATION

Sep 2013-Sep 2018	**Geological Sciences**, **Ph.D.:** University of California Riverside • Dissertation: The Semi-Direct Aerosol-Cloud Effects
Sep 2004-Sep 2007	**Meteorology, M.Sc.:** University of Tehran • Thesis: Numerical Solution of the Shallow Water Equations in Spherical Geometry Using Second- Order Centered and Fourth-order Compact Schemes
Sep 1999-Feb 2004	**Physics, B.Sc.:** Amirkabir University of Technology

AWARDS

- Ronald Blanchard Estate Fellowship, 2017
- Zeno Karl Schindler, 2015
- Dean's Distinguished Fellowship Award, UC Riverside, 2013

JOURNAL REVIEWS

- Atmospheric Chemistry and Physics Journal
- MDPI Atmosphere Journal

SKILLS

- Programming skills: NCL, R, Fortran, MATLAB, shell, Python, MySQL
- Modeling skills: NCAR CAM4 and CAM5, WRF-Chem
- Dealing with different data formats, extracting metadata, managing, converting and statistically analyzing data
- Involved in extensive data analysis/mining and computer simulations on aerosol-cloud interactions
- Utilizing R software and its statistical, data cleaning and visualization packages to analyze large precipitation data
- LaTeX, Presentation, High Performance Computing (HPC), Finite Element

SELECTED PUBLICATIONS

- ❖ **Amiri-Farahani**, R. J. Allen, and KF Li (2019): A La Nina-like climate response to south African biomass burning aerosol in CESM simulations, Journal of Geophysical Research (JGR), In revision.
- ❖ **Amiri-Farahani**, R. J. Allen, and KF Li (2019): The dust-cloud semi-direct effect using GCMs constrained by observations, Geophys. Res. Lett. (GRL).
- ❖ R. J. Allen, A. **Amiri-Farahani**, J. F. Lamarque, C. Smith, D. Shindell, T. Hassan, and C.E. Chung (2019): Observationally-constrained aerosol-cloud semi-direct effects, npj (Nature Partner Journal) Climate and Atmospheric Science.
- ❖ **Amiri-Farahani**, R. J. Allen, D. Neubauer, U. Lohmann (2017): Impact of Saharan dust on North Atlantic marine stratocumulus clouds: importance of the semidirect effect, Atmos. Chem. Phys. 17, p. 6305-6322.
- ❖ Keggenhoff, M. Elizabarashvili**, A. Amiri-Farahani**, L. King (2014), Trends in daily temperature and precipitation extremes over Georgia, 1971-2010, Wea. Clim. Extremes 4, p. 75-85.