

Mohammad Rubaiat Islam

ATMOSPHERIC RESEARCHER AND MODELER · REMOTE SENSING PROFESSIONAL

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Education

Indiana University Bloomington

Indiana, USA

MASTER OF SCIENCE IN GEOLOGICAL SCIENCES - ATMOSPHERIC SCIENCES

January 2022 - December 2023

- **Thesis:** Spatiotemporal distribution and meteorological signatures for the co-occurrence of atmospheric rivers and tropical cyclones

University of the Chinese Academy of Sciences

Beijing, China

MASTER OF SCIENCE IN PHYSICAL GEOGRAPHY

September 2017 - August 2020

- **Thesis:** Variations of stable isotopes in precipitation over Bangladesh related to climatic controls and moisture transports

Jahangirnagar University

Dhaka, Bangladesh

BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCES

April 2009 - August 2013

- **Undergraduate Research:** Use of Educational Global Climate Model (EdGCM) for understanding the basics of climate modeling.

Professional Experiences (Selected)

Department of Earth and Atmospheric Sciences, Indiana University Bloomington

Indiana, USA

GRADUATE STUDENT RESEARCHER

January 2022 - December 2023

- Reviewed scientific literature on the interaction between atmospheric rivers (ARs) and tropical cyclones (TCs) over different basins
- Produced AR and TC centered meteorological composites for ERA5 reanalysis data using python, xarray, scipy and numpy

Institute of Tibetan Plateau Research, Chinese Academy of Sciences

Beijing, China

GRADUATE RESEARCH ASSISTANT

September 2017 - August 2020

- Collected precipitation samples and performed laboratory analysis for their stable isotopic composition ($\delta^{18}O$ and δD)
- Used models and reanalysis datasets to study the climatic controls and moisture transport on stable isotopic variation in precipitation

Bangladesh Meteorological Department

Dhaka, Bangladesh

REMOTE SENSING SPECIALIST

January 2015 - March 2017

- Used geospatial technologies to improve agro-meteorological forecasts of Bangladesh Meteorological Department.
- Used Weather Research and Forecasting (WRF) model to produce high resolution precipitation forecasts over Bangladesh.

Selected Publications

- **Islam, M.R.**, Gao, J., Ahmed, N., Karim, M.M., Bhuiyan, A.Q., Ahsan, M.A., Ahmed, S., 2021. Controls on spatiotemporal variations of stable isotopes in precipitation across Bangladesh. *Atmospheric Research*, 247, doi:10.1016/j.atmosres.2020.105224
- O'Brien, T.A., Loring, B., Dufek, A., **Islam, M.R.**, Kamnani, D., Quagraine, K.T., Kirkpatrick, C., 2023. Atmospheric rivers in the eastern and midwestern United States associated with baroclinic waves. (*Under Review*)
- Quagraine, K.T., O'Brien, T.A., **Islam, M.R.**, 2024. Similarities in meteorological composites among different atmospheric river detection tools during atmospheric river landfall. (*Under Review*)
- **Islam, M.R.**, O'Brien, T.A., Quagraine, K.T., Ullrich, P., 2024. Analyzing the effect of tropical cyclones on atmospheric river statistics and dynamics. (*In Preparation*)

Selected Presentations

- **Islam, M.R.**, O'Brien, T.A., Quagraine, K.T., Ullrich, P., 2023. Analyzing the effect of tropical cyclones on atmospheric river statistics and dynamics. May 15-18, 2023, **Clemson Weather and Climate Extremes Workshop**, Clemson, South Carolina
- **Islam, M.R.**, O'Brien, T.A., Quagraine, K.T., 2022. Analyzing the effect of tropical cyclones on atmospheric river statistics and dynamics. December 12-16, 2022, **AGU Fall Meeting 2022**, Chicago, Illinois
- O'Brien, T.A., Loring, B., Dufek, A., **Islam, M.R.**, Kamnani, D., Quagraine, K.T., Kirkpatrick, C., 2022. Relationship of central North American atmospheric rivers to mesoscale convection and extratropical cyclones. December 12-16, 2022, **AGU Fall Meeting 2022**, Chicago, Illinois