Syed Hamid Ali

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Education

Purdue University — **West Lafayette, IN, USA**
MS Atmospheric Sciences — *2022 – 2024 (expected)*

Savitribai Phule Pune University (SPPU) — **Pune, MH, India**
M.Tech. Atmospheric Sciences, jointly with the Indian Institute of Tropical Meteorology (IITM) — *2019 – 2021*

University of Kashmir (KU) — **Srinagar, J&K, India**
B.E. Mechanical — *2014 – 2018*

Professional Appointments and Research Experience

Graduate Research Assistant, NOAA PERiLS Project — **Storm Lab, Purdue University**
MS Thesis: Hydrometeor Size Sorting in Quasilinear Convective Systems — *2022–Present*
Advisor: Dr. Daniel Dawson (Advisor)

Graduate Research Assistant — **IITM Pune**
M. Tech Thesis: Radar Derived Quantitative Precipitation Estimation — *2020–2021*
Advisors: Dr. M.C.R. Kalapureddy & Dr. Kishore Grandhi

Peer-reviewed Publications

1. Gangane, A., S. Pawar, P. Priyadarshini, V. Gopalakrishnan, **H. A. Syed**, and J. Dhangar. Impact of Decreasing Land-Sea Horizontal Pressure Gradient on the Lightning Activity over Western India. *International Journal of Climatology*, Manuscript ID JOC-23-0678.R2. [Revision Submitted]

2. Gangane, A., S. Pawar, P. Priyadarshini, **H. A. Syed**, and V. Gopalakrishnan. Falling Trend of Winter Lightning and Its Synoptic Background: Study over Western India. Manuscript 2023EA003425, Earth and Space Science, AGU. [Revision Submitted]

3. Ghosh, R., D. Mudiar, S. D. Pawar, M. A. Domkawale, **H. A. Syed**, A. Hazra, and V. Gopalakrishnan, 2024: Observation of a dramatic increase in the positive cloud-to-ground lightning in the Indian summer monsoon season. Atmospheric Research, 298, 107119, doi:10.1016/j.atmosres.2023.107119.

Conference Presentations

Oral .....

1. **2023** DSD Characteristics of the Tornadic QLCS of Mar. 30 2022. PERiLS Science Meeting, Memphis

2. **2023** DSD Characteristics and Evolution of the Leading Stratiform Region of a Tornadic QLCS during PERiLS-2022 IOP#2 (30 March 2022). AMS 40th Radar Conf.

3. **2023** An Overview of Purdue's Mobile Disdrometer Operations in PERiLS 2023, AMS 40th Radar Conf.

4. **2022** Seventh WMO International Workshop on Monsoons (IWM-7): PyScanCf Introduction

5. **2021** INTROMET: Hourly radar-based quantitative precipitation estimation Link to abstract P. 456

Poster

1. Dawson, Daniel T., Qin Jiang, Jacob Andrew Bruss, Matthew Graber, Funing Li, **Hamid Ali Syed**, Faith Vendl, Quinn Wilson, Michael I. Biggerstaff, and Sean M. Waugh (2022): Overview of Purdue's Mobile Disdrometer Operations in PERiLS 2022. In: 30th Conference on Severe Local Storms, Birmingham, AL, 22-26 November 2022. AMS, pp. 1-6.

2. **Syed, H. A.**, I. Sayyed, M. C. R. Kalapureddy, and K. K. Grandhi, 2022: PyScanCf –The open source python based library for IMD Doppler weather ... International Workshop on Monsoons (IWM-7). Link to Poster

3. **Syed, H. A.** and Kalapureddy, M.C.R. 2021, Radar-Based Quantitative Precipitation Estimation in Western Ghats, International Conference on Clouds and Precipitation, IITM Pune

4. **Syed, H. A.**, and M. C. R. Kalapureddy, 2021: Characterization of hourly radar-based quantitative precipitation estimation. Midwest Student Conference on Atmospheric Research. Link to Poster

Skills

Software Development

PyScanCf: The library for handling IMD radar data (Link to Library)

Xradar: Xarray based radar toolkit (Link to Library)

Programming

Python [IPyParallel, Dask Parallel, Parallel netCDF], LaTeX, R, FORTRAN 90/95, MATLAB

Visualization and Statistics: Matplotlib, Scikit-learn, Ferret, Climate Data Operators (CDO), Origin

Data Experience

Radar Volume Scan Datasets (vol, Cf-Radial, Rainbow, Sigmet), Disdrometer, Raingauge, MRR

Satellite Observations: TRMM, GPM (L2, L3, IMERG), INSAT3D, SRTM

Reanalysis & Model datasets: MERRA2, MRMS, NCAR Reanalysis, ERA5, ERSST-V5, ERA-INTERIM, WRF, GPCP, IMDAA

Open Source Contributions (GitHub)

***X*radar**: https://github.com/openradar/xradar

Py-ART: https://github.com/ARM-DOE/pyart

PyDDA: https://github.com/openradar/PyDDA/

IMD Radar Network Dataset, 2023: https://doi.org/10.6084/m9.figshare.22704910.v1

Wradlib: https://github.com/wradlib/wradlib

DRpy: https://github.com/dopplerchase/DRpy

PyMeso: https://github.com/jordanbrook/PyMeso

OpenRadar: https://openradarscience.org/pages/projects/

Professional Services

Member: American Meteorological Society (2022-present)

Reviewer: Journal of Open Source Software (2023-present)

***Mentoring* (*undergrads*)**

Aug 2022 – May 2023: Faith Vendl

Aug 2023 – Dec 2023: Cole Sand

Extracurricular Courses/Certifications

Dec 2020: Basics of Satellite Meteorology at Space Application Center, ISRO (Online)

Nov 2020: Machine Learning by Stanford University, Coursera

Oct 2020: Understanding and Visualizing Data with Python, Coursera

Sep 2020: Data Analysis with Python, IBM, Coursera

Sep 2020: Python for Data Science, IBM, Coursera

Sep 2020: Python for Everybody by University of Michigan, Coursera

Feb 2020: From the Byte to Service: Trans-disciplinary Climate Research, IITM

Jan 2020: National Information System for Climate and Environment Studies and its Activities, NRSC ISRO & IITM Pune

Jun 2020: Artificial Intelligence for Earth System Science Summer School, UCAR (remote)

Jul 2017: Course on Computer Concepts, NIELIT

May 2011: Course in C/C++, DOEACC

Comet/MetEd Courses, NCAR/UCAR (Link)

Feb 2023: Communicating Probabilistic Forecasts

Mar 2023: Communicating Forecast Uncertainty

Mar 2023: Gridded Forecast Verification and Bias Correction

Apr 2023: Analyzing and Evaluating Risk

Apr 2023: Impact-Based Forecasting: Identifying Hazards and Constructing Impacts Tables

Apr 2023: Met 101: Basic Weather Processes

Apr 2023: Met 101: Introduction to the Atmosphere

Apr 2023: NWP Essentials: NWP and Forecasting

Awards

2014-2017 & 2019-2021: Merit cum means scholarship – Ministry of Minority Affairs, Govt. of India

Language Skills

Kashmiri, English, Urdu, Arabic, Hindi