RAJANI KUMAR PRADHAN

PhD Candidate
Faculty of Environmental Sciences
Department of Water Resources and
Environmental Modeling
Czech University of Life Sciences Prague

RESEARCH INTERESTS

Remote sensing and satellite precipitation, global water cycle, application of remote sensing precipitation on hydrology, extreme events.

EDUCATION

PhD Candidate, Czech University of Life Sciences Prague, 2019-present
Thesis: The Global Precipitation Measurement Mission: Performance evaluation across multiple spatio-temporal scales.

M.Sc. in Environmental Science, Central University of Rajasthan, India, 2014-2016
Thesis: Potential impact of climate change on precipitation of Rajasthan, India

Bachelor of Science, Govt. Degree College (men) Srikakulam, India, 2011-2014

AWARDS & SCHOLARSHIPS

Rector's Prize (1st place) for PhD students with outstanding research and publication (2022)

Roland Schlich travel support to participate in the EGU General Assembly Vienna (2022)

University Grant Commission (UGC)-National Eligibility Test (NET) for Lectureship in Environmental Sciences

PROFESSIONAL EXPERIENCE

Graduate Research Assistant

Department of Water Resources and Environmental Modelling, Czech University of Life Science Prague, 2022-2023.
Project: "Investigation of Terrestrial HydrologicAl Cycle Acceleration (ITHACA)". Funded by GACR Junior Star.

Junior Research Fellow

Institute of Environment & Sustainable Development, Banaras Hindu University, 2017-2019.
Project: "Long-term monitoring of precipitation and evapotranspiration for discharge prediction in selected catchments of Kosi river basin." Funded by Department of Science and Technology (DST), Government of India.

TEACHING & MENTORING EXPERIENCE

Teaching

Exploratory Data Analysis, Czech University of Life Sciences Prague, 2021-2022
Exploratory Data Analysis, Czech University of Life Sciences Prague, 2022-2023

Mentoring

Faculty of Environmental Sciences, Czech University of Life Sciences Prague (2021-2022.): co-advisor in one Master thesis.

Research Grants

- A review and synthesis of GPM products efficiency: A global perspective, *Principal Investigator*, 2019-2020 (IGA[1]).
- Performance evaluation of GPM IMERG precipitation over the tropical Oceans, *Principal Investigator*, 2020-2021 (IGA).
- Water Cycle Intensification Over Czech Republic, *Scientific Collaborator*, 2021-2023 (UGC[1])
- Estimation of tropical oceanic precipitation: A multi-datasets approach, *Principal Investigator*, 2021-2022 (IGA).
- Intercomparison of diurnal cycle of precipitation estimates over the global ocean in 2001-2020, *Principal Investigator*, 2022-2023 (IGA).

Selected Publications

- **Pradhan, R. K.,** Markonis, Y., Vargas Godoy, M. R.*, Villalba-Pradas, A., Andreadis, K. M., Nikolopoulos, E. I., ... & Hanel, M. (2022). Review of GPM IMERG performance: A global perspective. *Remote Sensing of Environment*, 268, 112754.
- **Pradhan, R. K.,** & Markonis, Y. (2023). Performance evaluation of GPM IMERG precipitation products over the tropical oceans using Buoys. *Journal of Hydrometeorology*, 24(10), 1755-1770.
- **Pradhan RK,** Sharma D, Panda SK, Dubey SK, Sharma A (2018) Changes of precipitation regime and its indices over Rajasthan state of India: impact of climate change scenarios experiments. *Climate Dynamics*: 1-16.

Research

1. Markonis, Y., Godoy, M. R. V., **Pradhan, R. K**., Pratap, S., ... & SM Papalexiou. (2023). Global Partitioning of precipitation in the terrestrial water cycle. Communications Earth & Environment, 2023, 1-31 (in revision).
2. Godoy, M. R. V., Markonis, Y., Rakovec, O., Jenicek, M., Dutta, R., **Pradhan, R. K**., ... & Hanel, M. (2023). Water Cycle Acceleration in Czechia: A Water Budget Approach. *Hydrology and Earth System Sciences Discussions*, 2023, 1-31.
3. Rahim, A., Markonis, Y., Cuřín, V., **Pradhan, R. K.,** & Máca, P. (2023). Systematic analysis of the flash drought research: contribution, collaboration, and challenges. *Theoretical and Applied Climatology*, 1-14.
4. Srivastava, P. K., **Pradhan, R. K.,** Petropoulos, G. P., Pandey, V., Gupta, M., Yaduvanshi, A., ... & Sahai, A. K. (2021). Long-Term Trend Analysis of Precipitation and Extreme Events over Kosi River Basin in India. *Water*, 13(12), 1695.
5. **Pradhan RK,** Srivastava PK, Maurya S, Singh SK, Patel DK (2019) Integrated framework for soil and water conservation in Kosi River Basin. *Geocarto International:1-20*

[1] IGA and UGC are research grants for Ph.D. Candidates and groups of Young Researchers, respectively (Funding 6 000 – 10 000 EUR each).

6. Sharma A, Sharma D, Panda SK, Dubey SK, **Pradhan RK (2018)** Investigation of temperature and its indices under climate change scenarios over different regions of Rajasthan state in India. *Global and Planetary Change* 161:82–96.

Book Chapters

Pradhan, R. K., Maurya, S., & Srivastava, P. K. (2019). Morphometric Analysis and Prioritization of Sub-Watersheds in the Kosi River Basin for Soil and Water Conservation. In Wastewater Reuse and Watershed Management: Engineering Implications for Agriculture, Industry, and the Environment (pp. 353-368). CRC Press

TECHNICAL SKILL

- Programming languages; R and R-markdown (good), Python(basics).
- Work experience in parallel programming using R, Spark and HDPA.
- Arc-GIS, GrADS, CDO

OTHER ACTIVITIES

Research internship (Erasamus + mobility granrt)

Department of Geosciences, University of Padova, Italy, May2023-July2023

Supervisor: Dr. Francesco Marra

WORKSHOPS/SHORT COURSES ATTAINED

- Completed the lecture series of the 'GPM Mentorship Program 2022' April 2022 (Program speakers: Courtney Schumacher, Chuntao Liu, Dorian Janney, Jackson Tan, Mircea Grecu, Pierre Kirstetter, Zhong Liu).
- Selected and participated in the PRACE Summer of HPC (SoHPC) programme 2021: worked in the project 'The convergence of HPC and Big Data/HPDA' from 2nd July to 31 August 2021 (mentored by prof. Giovanna Roda from Technische Universität Wien).
- GIAN course on 'Weather Radar and Hydrology' conducted by Indian Institute of Technology (IIT) Madras, Chennai, 05th-17th March 2018.
- SMART training on 'Basic of Satellite Meteorology' conducted by Space Application Centre Indian Space Research Organisation (SAC-ISRO) Ahmedabad, 12-16 Feb 2018.
- National workshop on "Techniques in hyperspectral data analysis and processing" 29 May – 03 June 2017 at Institute of Environment and Sustainable Development, BHU, Varanasi.

PERSONAL INFO

Date of Birth: 28.05.1994
Nationality: Indian
Marital status: Single
Languages: English, Hindi, Odia, Telugu

CONTACT

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