PRAVEEN KUMAR, B. Tech., M. Tech., Ph.D.

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Village - Saidpur, PO & PS – Fatuha, Fatuha, Patna, Bihar, India – 803201

Educational Qualification

Ph.D. ***Environmental Science***

Award in Nov, 2017

Central University of South Bihar, India.

Ph.D. Title: "Future Projections of Rainfall & Temperature and its Impact on Transmission of Malaria, Japanese Encephalitis and Acute Encephalitis Syndrome"

Subject Studied during course work: Earth System Modeling, Computational Technique, Biometeorology

M.Tech. ***Modeling and Simulation,*** **2013**

University of Pune, India.

(***Major Subject***: Stochastic and Deterministic Modeling, Computer Programming)

B.Tech. ***Bioinformatics*****, 2011**

D.Y. Patil Vidyapeeth, Pune, India

(***Major Subject***: Mathematics, Bioinformatics, Computer Programming, Computer Algorithm)

Research and Working (Teaching) Experience

- Project Scientist-C May, 2020 – Current
  India Meteorological Department, New Delhi (Pay Level-11)

- Research Associate Sep, 2017 – Jan, 2020
  Department of Environmental Science, Central University of South Bihar, India

- Scientist C-Project June-Sep, 2017

Division of Environmental Epidemiology, ICMR-National Institute of Malaria Research, New Delhi In Centre of Excellence for Climate and Health (Grade Pay: 6600)

- Project Research Fellow 2016- 2017
  DST-Project, Govt. of India, Central University of South Bihar, India

- Senior and Junior Research Fellow 2013-2016
  DST-Project, Govt. of India, Central University of South Bihar, India

- Invited Lecture April, 2013
  School of Environment, Biological and Earth Sciences, Central University of South Bihar, India

Research Publications

1. Kumar P and Sarthi P.P. (2021) Intraseasonal variability of Indian Summer Monsoon Rainfall in CMIP6 models simulation. Theor Appl Clima7ol (227).

2. Barat A, Sarthi PP, Kumar S, Kumar P; Sinha AK (2021): Surface Urban Heat Island (SUHI) over Riverside Cities along the Gangetic Plain of India. Accepted, Pure and Applied Geophysics (Springer)

3. Kumar P, Vatsa R, Sarthi PP, et al (2020) Modeling an association between malaria cases and climate variables for Keonjhar district of Odisha, India: a Bayesian approach. J Parasit Dis. doi: 10.1007/s12639-020-01210-y

4. Kumar P., Sarthi P.P., Kumar S, Barat A, and Sinha A.K. (2020): Evaluation of CORDEX-RCMS and their driving GCMS in simulation of Indian Summer Monsoon Rainfall and its future projections. Arab. J. Geosci. https://doi.org/10.1007/s12517-020-5081-x.

5. Barat A, Sarthi PP, Kumar S, and Kumar P (2020) Observed and simulated winter temperature over Gurudongmar area , North Sikkim , India. Mausam. 1:115–124

6. Kumar P, Sarthi PP (2019) Surface Temperature Evaluation and Future Projections Over India Using CMIP5 Models. Pure Appl Geophys. doi: 10.1007/s00024-019-02203-6

7. Kumar P. Sarthi P.P., Kumar S, Barat A, and Sinha A.K. (2019): Evaluation of NASA's NEX-GDDP Simulated Summer Monsoon Rainfall over Homogeneous Monsoon Region of India. Theor Appl Climatol doi: https://doi: 10.1007/s00704-020-03188-2

8. Sarthi PP, Kumar S, Barat A, Kumar P et al (2019) Linkage of aerosol optical depth with rainfall and circulation parameters over the Eastern Gangetic Plains of India. J Earth Syst Sci. doi: 10.1007/s12040-019-1204-8

9. Kumar S, Kumar P, Barat A, et al (2019) Characteristics of Observed Meteorological Drought and its Linkage with Low-Level Easterly Wind Over India. Pure Appl Geophys. doi: 10.1007/s00024-019-02118-2

10. Deshmukh P, Narang R, Jain J, **Kumar P**, et al (2019) Leptospirosis in Wardha District, Central India—Analysis of hospital based surveillance data. Clin Epidemiol Glob Heal 7:102–106. doi: 10.1016/j.cegh.2018.02.005

11. **Kumar P**, Kshirsagar A, Shil P (2018) Estimation of epidemiological parameters for historical ship outbreaks of influenza. Biomed Res J 5:28. doi: 10.4103/2349-3666.240299

12. Barat A, Kumar S, **Kumar P**, Parth Sarthi P (2018) Characteristics of Surface Urban Heat Island (SUHI) over the Gangetic Plain of Bihar, India. Asia-Pacific J Atmos Sci 54:205–214. doi: 10.1007/s13143-018-0004-4

13. Pisudde PM, **Kumar P***, Sarthi PP, Deshmukh PR (2017) Climatic Determinants of Japanese Encephalitis in Bihar State of India : A Time-Series Poisson Regression Analysis. 49:13–18

14. **Kumar P**, Pisudde PM, Sarthi PP, et al (2017) Acute encephalitis syndrome and Japanese Encephalitis, status and trends in Bihar State, India. Natl Med J INDIA 30:317–320. doi: 10.4103/0970-258X.239070

15. Parth Sarthi P, **Kumar P**, Ghosh S (2016) Possible future rainfall over Gangetic Plains (GP), India, in multi-model simulations of CMIP3 and CMIP5. Theor Appl Climatol 124:691–701. doi: 10.1007/s00704-015-1447-5

16. **Kumar P**, Pisudde PM, Sarthi PP, et al (2016) Acute encephalitis syndrome and Japanese Encephalitis, status and trends in Bihar State, India. Int J Infect Dis 45:306–307. doi: 10.1016/j.ijid.2016.02.671

17. Parth Sarthi P, Ghosh S, **Kumar P** (2015) Possible future projection of Indian Summer Monsoon Rainfall (ISMR) with the evaluation of model performance in Coupled Model Inter-comparison Project Phase 5 (CMIP5). Glob Planet Change 129:92–106. doi: 10.1016/j.gloplacha.2015.03.005

MANUSCRIPT with Journal

1. "Extended Range Forecast of Monsoon at Smaller Spatial Domains over India for Application in Agriculture". Submitted to Theoretical and Applied Climatology (Under Review)

2. "Meteorological linkage for the prevalence of Acute Encephalitis Syndrome: A modeling study". Submitted to Modeling Earth Systems and Environment (In Revision).

3. "EFFECT OF TEMPERATURE ON GENDER-SPECIFIC ALL-CAUSE MORTALITY: A CASE STUDY OF A CITY IN NORTHERN INDIA"

Report/Book Chapter

1. **EXTENDED RANGE FORECAST (ERF) DURING SOUTHWEST MONSOON 2020,** D.R. Pattanaik, Satendra Kumar, **Praveen Kumar**, Ashish Alone, Raju Mandal, Avijit Dey, R. Phani, M. Mohapatra, and A. K. Sahai, Published by India Meteorological Department, India.

International Visit

Attended the school themed "Integrated Environmental Health Impact Assessment (IEHIA) of Air Pollution and Climate Change in Mediterranean Areas", International Centre for Theoretical Physics (ICTP), **Trieste, Italy**. 23-27 April, 2018

Work experience with models and packages installations

- **Extended hydrological Prediction in the capacity of operational forecast**

  The forecasted rainfall for extended hydrological prediction being provided over particular reservoir or dam are of India. Further, to assess the model's skill in extended and medium range forecast.

- **Data Processing and Scientific Visualization Packages**

  Analysed large volumes of atmospheric (outputs from model simulations) and reanalysis data products. Used advanced meteorological packages and visualization tools such as **GrADS**, MATLAB, ArcGIS, NCL, **R** and Python.

- **Data Formats and Data Extraction**

  Used Reanalysis and model (GCM/RCM) simulations data with formats e.g. self-describing files (GRIB1 and 2, HDF4 and 5, NetCDF3 and 4) in the research work.

- **Model and Package Installation, upgrade and maintenance**

  Installed and upgraded various software packages and utilities on Windows and Unix operating systems to handle various data formats and their visualization. Proficient in mathematical models and graphical packages such as GrADS, XCONV, HDFView, Panoply and **MS-Office**.

- **Statistical modelling for Climate Driven Vector borne Diseases**

  Developed statistical model in association with climate and Vector Borne disease (Japanese Encephalitis and Malaria) for district of Bihar and Orissa in India. The **SPSS, R software** used for model analysis and evaluation. The Poisson regression model and Bayesian Gaussian time series regression modeling performed.

- **Teaching to Master students and assisting M.Sc. and M.Tech. students in their dissertation**

PROFESSIONAL AFFILIATIONS AND SERVICES

- **HONORARY ROSALIND MEMBER OF LONDON JOURNALS PRESS (ID#GB24652)**
- **Reviewer for** Current Journal of Applied Science and Technology
- **Reviewer** for PLOSONE (Public Library of Science)
- **Reviewer** for International Journal of Biometeorology (Springer)
- **Reviewer** for Arabian Journal of Geosciences (Springer)
- **Reviewer** for Biomedical Research Journal (Medknow)
- **Executive council Member**: India Meteorological Society (IMS, India)-Patna Chapter
- **Member (Annual):** Indian Science Congress
- **Advisor**: Gangeya (A Not for Profit Organization), Patna, India
- **Expert**: Policy Change Initiative (A Not for Profit Organization), New Delhi, India
- https://scholar.google.co.in/citations?user=mvgcN1FlQBAC&hl=en

Conferences/Workshop/Training and School Attended

- Talk in Annual Monsoon E-Workshop and National E-Workshop on Cloud and Precipitation Processes, 18-20th January 2021, "Medium to Extended Forecast over River Basins During Monsoon-2020. **Jan-2021**
- Attended International Conference on Climate Services-6, Feb 11 – 13, 2020, Pune, India
- Abstract selected for poster presentation in American Monsoons: progress and future plans at ICTP South American Institute for Fundamental Research in São Paulo.**Aug-2019**
- Statistical Analysis using R Software in Indian Institute of Technology (IIT), Kanpur, India.
- Attended two weeks' school organized by Science and Engineering Research Board (SERB) on Numerical Modelling and Forecasting of Desert Storm and Cloudburst. **Feb, 2019**
- Special Lecture Series on Cloud Convection Parametrization, IITM Pune, India
- Short Course on Dynamic Data Assimilation: Theory and Applications, IITM Pune, India
- Indo-US Workshop on Development and Applications of Downscaling Climate Projections, IITM, Pune (CCCR Division) **March, 2017**
- Regional Training program on Post Disaster Needs Assessment (PDNA) Tools for India, Organized by ADPC, World Bank Group, BSDMA and NIDM