

EXPERTISE

| KEY FIELDS

Climate variability
Extremes and intermittency
Hydrology, aerosols, clouds, wind
Scaling in geophysics
Climate chamber simulations

| SKILLS / DATA

Scientific writing/presenting
Peer review/ supervising
In-situ measurements
Analysis of high-res datasets
• Time series analysis
• Numerical simulations
• Stochastic analysis
• Multifractals, spectral analysis

| PROGRAMMING

Python, Linux shell scripting, Git
QGIS , LaTeX
OS: Linux, Mac, Microsoft

| PUBLICATIONS

Journal papers (9, 3 first author)
Reviewer for (5 journals)
Book chapters (2)
International conferences (10)
Non-academic publications (5)

| TEACHING / MENTORSHIP

Teaching (250+ hrs, UG & PG)
Co supervision (3 students)
Thesis committee (1 student)

WORK EXPERIENCE

Post Doctoral Researcher | Mar 2023 – Apr 2024

CEREA / HM&Co. (ENPC), Paris (France)

PhD: Environmental Sciences | Oct 2019 – Mar 2023

HM&Co. , École nationale des ponts et chaussées (ENPC), Paris (France)

Junior Research Fellow | Dec 2017 – Sep 2019

Indian Institute of Tropical Meteorology, Pune; MG University, Kerala (India)

Ad hoc faculty | Jul 2015 – Jun 2017

National Institute of Technology, Calicut (India)

Assistant Manager | Jun 2013 – Feb 2015

Manufacturing, Dana India Pvt. Ltd, Pune (India)

EDUCATION

| PhD (Environmental Science & Technology), 2023

École nationale des ponts et chaussées (ENPC), Paris (France)

| M. Tech (Materials Science), 2013

Defence Institute of Advanced Technology (DIAT), Pune (India)

| B. Tech (Mechanical Engineering), 2010

Mar Athanasius College of Engineering (MACE), Kerala (India)

RESEARCH HIGHLIGHTS

- Characterizing uncertainties in geophysical fields across space and time, by considering extreme variability and intermittency following 3 UN SDG goals - Affordable and clean Energy :- Quantifying rainfall influence on wind power (RW-Turb), validation, sampling and statistical analysis of high resolution data from wind farm and mast.
Climate action :- Developed a scale invariant relation for kinetic energy (KE) from rainfall rate, valid across scales using 7 year long rain data in Paris, towards reliable estimation of KE required in erosion models
Sustainable cities and communities :- Atmospheric visibility and its characterization using extinction coefficient of aerosols ; variability of aerosol concentration across scales
- Collaborating with IRSN, Boralex and sense-city for experimentation and dissemination of results; expanding understanding of extreme events
- CAIPEEX cloud seeding campaign over Western Ghats, India

PhD thesis: Independent and joint multifractal analysis of atmospheric fields in real and controlled environments: <https://www.theses.fr/2023ENPC0016>

PROJECTS (selected)

- RW-Turb (ANR, France and Boralex: Characterizing effect of rainfall and small scale effect of wind turbulence in wind turbine power, 2020 to 2023) - <https://hmco.enpc.fr/portfolio-archive/rw-turb/>
- CAIPEEX (MoES, Government of India: flights campaigns for enhancing precipitation over Western Ghats following WMO standards and IPCC AR5, 2017 - 2019) - <https://www.tropmet.res.in/~caipeex/cloud-seeding.php>

PUBLICATIONS

Journals (selected)

- Multifractal analysis of wind turbine power and rainfall from an operational wind farm – Part 2: Joint analysis of available wind power and rain intensity (2024), Jose, J., Gires, A., Schnorenberger, E., Roustan, Y., Schertzer, D., and Tchiguirinskaia, I.: Nonlin. Processes Geophys., 31, 603–624, doi.org/10.5194/npg-31-603-2024
- Scale invariant relationship between rainfall kinetic energy and intensity in Paris region: An evaluation using universal multifractal framework (2022), J Jose, A Gires, I Tchiguirinskaia, Y Roustan, D Schertzer, Journal of Hydrology 609, 127715 <https://doi.org/10.1016/j.jhydrol.2022.127715>
- CAIPEEX: Indian Cloud Seeding Scientific Experiment (2023); T Prabhakaran, M Varghese, Varghese, ..J Jose...Bulletin of the American Meteorological Society, 104(11), pp.E2095-E2120. <https://doi.org/10.1175/BAMS-D-21-0291.1>
- Varghese, M., Jose, J., and Prabha, T.V., (2021). Vertical profile of aerosol ..including activation over a rain shadow region in India. Atmospheric Environment, doi.org/10.1016/j.atmosenv.2021.118653

Peer reviewer in

- Journal of Hydrology, Hydrology and Earth System Sciences, Earth Surface Processes, Hydrological Sciences Journal, Chaos

Conferences (latest)

- Jose, J., Roustan, Y.. and Schertzer, D.: Multifractal analysis of aerosol ..concentration during rain & dry .. in nm/μm range, EGU 2024, Vienna, Austria, doi.org/10.5194/egusphere-egu24-17721, 2024.

OTHERS

Instrumentation: Optical disdrometers, 3d sonic anemometers, meteo stations, mini doppler station
Aerosols: APS, SMPS, PCASP, TEM EDAX, ICP-OES, CCNC, CDP, SP2
Membership: European Geosciences Union (EGU), American Geosciences Union (AGU)
Awards: Sao Paulo Aerosol 2019, Roland Schlich ECSTS (19,20)
Languages: English, Malayalam, Hindi, French (B2)
Hobbies: Reading, skating, travelling, writing

REFERENCES

Available on request