

## EXPERTISE

### | KEY FIELDS

Climate variability  
Aerosols, clouds  
Hydrology  
Renewable energy (wind)  
Scaling in geophysics  
Climate chamber simulations

### | SKILLS / DATA

Aircraft and field campaigns  
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 bash scripting, Git  
QGIS, LaTeX, server usage  
OS: Linux, Mac, Microsoft

### | PUBLICATIONS

Journal papers (8, 3 first author)  
Reviewer for (4 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)

- Below cloud scavenging of size resolved aerosols (nm,  $\mu\text{m}$ ) particles, their correlation with rain rate (using IRSN data from Cherbourg-Octeville).
- Scaling of rain using mini doppler radar, 3d stereo and optical disdrometers

### PhD: Environmental Sciences | Oct 2019 – Mar 2023

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

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

- Characterizing uncertainties in geophysical fields across space and time, by considering extreme variability and intermittency following 3 UN SDG goals.
- Developed a scale invariant relation for kinetic energy from rainfall rate for erosion and rural application using Universal Multifractals (UM).
- Statistical characterization of visibility from extinction coefficient of particles and compared analysis using METAR data.
- Quantifying rainfall influence on wind power production (RW-Turb).

### Junior Research Fellow | Dec 2017 – Sep 2019

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

- Aircraft campaign for quantifying the impacts of pollution and aerosols on monsoon clouds, over drought prone regions of western ghats.
- Airborne aerosol collection, and their physical and chemical characterization (r black carbon, organic, inorganic), effect on CCN, rain; PM<sub>2.5</sub>, PM<sub>10</sub> monitoring
- Comparisons using models and satellite data HYSPLIT, ERA5, MERRA2 etc.

### 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, gold medal), 2013

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

### | B. Tech (Mechanical Engineering, distinction), 2010

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

## 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)

- Jose, J., Gires, A., Schnorenberger...: (2024) Part 2: Joint multifractal analysis of .. wind power and rain intensity from an operational wind farm, *Nonlin. Processes Geophys. Discuss.* [preprint], <https://doi.org/10.5194/npg-2024-6>
- Prabha, T.V.,.. Jose, J,...(2023) "CAIPEEX - Indian cloud seeding scientific experiment", *Bulletin of the American Meteorological Society*, [doi.org/10.1175/BAMS-D-21-0291.1](https://doi.org/10.1175/BAMS-D-21-0291.1)
- Jose, J., Gires, A., Tchiguirinskaia, .. & Schertzer, D. (2022). Scale invariant relationship between rainfall kinetic energy and intensity...*Journal of Hydrology*..., [doi.org/10.1016/j.jhydrol.2022.127715](https://doi.org/10.1016/j.jhydrol.2022.127715)
- Gires, A., Jose, J., Tchiguirinskaia, I., & Schertzer, D. (2022). Combined high-resolution rainfall and wind data collected... on a wind farm 110 km southeast of Paris (France). *Earth System Science Data*, 14(8). [doi.org/10.5194/essd-14-3807-2022](https://doi.org/10.5194/essd-14-3807-2022)
- Varghese, M., Jose, J., and Prabha, T.V., (2021). Cloud and aerosol characteristics during dry and wet days of southwest monsoon... India. *Meteorology and Atmospheric Physics*, 133(4), pp.1299-1316. [doi.org/10.1007/s00703-021-00811-3](https://doi.org/10.1007/s00703-021-00811-3)

### Peer reviewer in

- 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](https://doi.org/10.5194/egusphere-egu24-17721), 2024.

## OTHERS

Instrumentation:	Optical disdrometers, 3d sonic anemometers, meteo stations, Wind Tubrines (Vestas V90)
	Aerosols: APS, SMPS, AIMMS, PCASP, CCNC, CDP, SP2
Membership:	European Geosciences Union (EGU), American Geosciences Union (AGU)
Awards:	Sao Paulo Aerosol 2019, Roland Schlich ECSTS (19,20), Masters gold, State rank 10 <sup>th</sup>
Writing:	Words Edge, People Archive of Rural India (PARI), Strange Horizons, Mithila review
Languages:	English, Malayalam, Hindi, French (B1)
Hobbies:	Writing, reading, skating, traveling, badminton

## REFERENCES

Available upon request