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, µm) 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; PM2.5, PM10 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, 2024.](https://doi.org/10.5194/egusphere-egu24-17721,%202024.)

OTHERS

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| --- | --- |
| 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 10th |
| 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