

# José Dias Neto - CV

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## Education

- 2017-Present PhD in Meteorology - University of Cologne  
*PhD's Thesis: Investigating Microphysical Processes in Ice and Snow Clouds Using Novel Combination of Polarimetric and Multi-Frequency Cloud Radars*  
Advisor: Dr. Stefan Kneifel
- 2012-2014 MSc in Meteorology - National Institute For Space Research  
*Master's Thesis: Pyrogeometer Characterization and Quality Control of Measured Data*  
Advisor: Dr. José Celso Thomaz
- 2007-2011 BSc in Physics - Federal University of Rio Grande do Norte  
*Undergraduate Project: Irregularity at Ionospheric Plasma - Effect on Satellite Telecommunication*  
Advisor: Prof. Dr. Enivaldo Bonelli

## Professional Experience

- 2014 National Institute For Space Research, Brazil  
2017 *Research Assistant*
- Development of **computational tools** to read and evaluate large data arrays, of Aerosol Optical Depth, retrieved by new Generation of NOAA Polar Satellite System (SUOMI - NPP) over Brazilian territory  
Advisor: Dr. Simone Sievert da Costa Coelho

## Field Experience

- 1 Nov 2018 - Tripex-Pol  
21 Feb 2019 *Assistant*
- Assistence during the **Triple-frequency and Polarimetric Radar Experiment** at Jülich - Germany
- 20 Nov 2013 - Archipelago of São Pedro and São Paulo Program  
25 Nov 2013 *Scientist*
- Scientific cruise** participation on board of the Araguari Ocean Patrol Vessel for maintenance and data retrieval from **meteorological stations** in São Pedro and São Paulo rocks.
- 04 Jun 2013 - Prediction and Research Moored Array in the Atlantic (PIRATA)  
24 Jun 2013 *Scientist*
- Scientific cruise** participation on board of the Ocean Stalwart ship for maintenance of oceanic buoys and measuring oceanic/atmospheric variables using **XCP, underwayCTD, and radiosonde**.
- 15 Feb 2013 - Prediction and Research Moored Array in the Atlantic (PIRATA)  
25 Mar 2013 *Scientist*
- Scientific cruise** participation on board of the Ocean Stalwart ship for maintenance of oceanic buoys and measuring oceanic/atmospheric variables using **XCP, underwayCTD, and radiosonde**.

## Publications

Mróz, K., Battaglia, A., Kneifel, S., D'Adderio, L. P., **Dias Neto, J.**, (2020). **Triple-frequency Doppler retrieval of characteristic raindrop size**, *Earth and Space Science*, <https://doi.org/10.1029/2019EA000789>.

**Dias Neto, J.**, Kneifel, S., Ori, D., Trömel, S., Handwerker, J., Bohn, B., Hermes, N., Mühlbauer, K., Lenefer, M., and Simmer, C., (2019). **The TRiple-frequency and Polarimetric radar Experiment for improving process observations of winter precipitation**, *Earth System Science Data*, 2019, 11, pp.845-863. <https://doi.org/10.5194/essd-11-845-2019>.

Kneifel, S., **Dias Neto, J.**, Ori, D., Moisseev, D., Tyynelä, J., Adams, I. S., Kuo, Kwo-Sen, Bennartz, R., Berne, A., Clothiaux, E. E., Eriksson, P., Geer, A. J., Honeyager, R., Leinonen, J., Westbrook, C. D., (2018). **Summer Snowfall Workshop: Scattering Properties of Realistic Frozen Hydrometeors from Simulations and Observations, as well as Defining a New Standard for Scattering Databases**, *Bulletin of the American Meteorological Society*, 2018, 99, pp.55-55. <https://doi.org/10.1175/BAMS-D-17-0208.1>.

**Dias Neto, J.**, Thomaz Júnior, J. C., and Urbano Neto, D. F. (2016). **Mathematical Adjustment Method for Validation of Longwave Radiation Sensor Measurements**, *Revista Brasileira de Meteorologia*, 2016, vol.31, n.1, pp.37-44. <http://dx.doi.org/10.1590/0102-778620140022>.

## Python Packages

**Dias Neto, J.**, Castelhão, G., (2020). **McRdar: an Open Source Python package to simulate the multi-frequency radar variables using the output from McSnow**, *Zenodo*, <https://doi.org/10.5281/zenodo.3723886>

## Conferences

**2019** - 39th International Conference on Radar Meteorology (Japan)

Talk: Investigating snow aggregation close to the melting layer using novel ground-based triple-frequency observations (**prize: 2nd best talk**)

**2019** - 2nd International Summer Snowfall Workshop (Finland)

Poster: Intense aggregation close to the melting layer observed with triple-frequency radars

**2018** - 15th Conference on Cloud Physics/15th Conference on Atmospheric Radiation (Canada)

Talk: Intense Aggregation Above The Melting Layer Observed With Novel Triple-frequency Radars

**2017** - 1st International Summer Snowfall Workshop (Germany)

Poster: First results of the TRiple-frequency and Polarimetric radar Experiment for improving process observation of winter precipitation (TRIPEX campaign)

**2015** - VI International Symposium of Climatology (Brasil)

Poster: Evaluation of Aerosol Optical Depth retrieved by new generation of NOAA polar satellites on Brazilian territory

**2014** - Brazilian Symposium of Geophysics and Aeronomy (Brasil)

Poster: GPS satellite scintillation, in 8 of June from 2011, in Natal (Brazil), generated by magnetic storms

**2013** - V International Symposium of Climatology (Brasil)

Talk: An methodology for correcting the observed longwave radiation

**2010** - XXVIII North and Northeast Physicist Meeting (Brasil)

Poster: Spatial coordinate acquisition using an optical mouse

## Skills

- **Doppler Radars**

Good experience working with the moments and spectra from **Meteor 50DX (X-band)** from Selex ES, **MIRA 35 (Ka-Band)** from Meteorologische Messtechnik, **FMCW 94 (W-band)** from Radiometer Physics.

- **Radar Forward Operators**

Introductory experience working with **PAMTRA** and **PyTMatrix**.

- **Sensors**

Strong knowledge of calibration and measurement technique of **longwave radiation sensors**; experience with measurement procedure using **Expendable Current Profiler(XCP)**, **UnderwayCTD**, **Radiosonde**.

- **Data Acquisition**

Good knowledge programming **datalogger CR3000** from Campbell Scientific.

- **Coding**

Good knowledge of scientific programming; all projects were developed in **Python** and **Shell-Script**. The Python library used on those projects are: **NumPy**, **SciPy**, **h5py**, **pandas**, **IPython**, **Matplotlib**, **Basemap**, **pytest**, **pep8**, **flake8**, **virtualenv**, **xarray**, **Jupyter Notebook**. Yet, I have a introductory knowledge using **Bokeh**.

- **Systems**

Good experience with administration of **Unix-based** and **Mac OS X** operating systems, experience with administration and installation of **Rocks cluster**.

- **Generic Tools**

Good experience with **LaTeX** writing; good experience with version control system (Mercurial and Git) and repository (**Bitbucket** and **GitHub**).

- **Prototyping Platform**

Introductory knowledge in **Arduino** and **Raspberry Pi** open-source prototyping platform.

## Languages

- Portuguese (native language)
- English