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: Pyrgeometer 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.

Dataset

Dias Neto, J., Kneifel, S., Ori, D. (2019). **The TRIple-frequency and Polarimetric radar Experiment for improving process observation of winter precipitation (version 2)** [Data set], *Zenodo*, http://doi.org/10.5281/zenodo.1341390

Python Packages

Dias Neto, J., Castelão, 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: Spacial 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 **ShellScript**. The Python library used on those projects are: **NumPy, SciPy, h5py, pamdas, 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