Thiago V. **dos Santos**

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Education

University of Minnesota – Twin Cities *St. Paul, MN*

Ph.D. in Land and Atmospheric Science *Feb 2013 – August 2017*

- Integrated a rice growth and irrigation module into the Agro-IBIS land surface model. Using this updated Agro-IBIS, assessed the potential role of a changing climate on rice yield and irrigation demand.
- Two scientific papers in preparation.

Federal University of Rio Grande do Sul (UFRGS - Brazil) *Porto Alegre, RS*

M.Sc. in Remote Sensing *2007 – 2009*

- Combined meteorological data with high-resolution satellite images to estimate evapotranspiration over both rice fields in southern Brazil.
- One paper published in a Brazilian journal and many recent co-authorships.

Federal University of Alagoas (UFAL - Brazil) *Maceió, AL*

B.S. in Meteorology *2001 – 2006*

Professional Experience

Department of Climate and Space Sciences and Engineering - CLaSP *University of Michigan*

NASA Postdoctoral Research Fellow *Sep. 2017 – Aug. 2019*

- Examined satellite images of soil moisture from NASA to better understand how plants respond to hydric stress.
- Published a scientific paper in collaborated with professors of the CLaSP department.

Brazilian Institute for Space Research - INPE *Center for Earth System Science*

Research Fellow *Mar. 2011 – Dec. 2012*

- Led the development of the crop module of the land surface model of the Brazilian Earth System Model (BESM).
- Collaborated in the early steps of integrating deforestation estimates of the Amazon forest into BESM, based on data from the INPE-Emission Model (INPE-EM) system.

Federal University of Rio Grande do Sul - UFRGS *Faculty of Agronomy*

Research Fellow *Apr. 2009 – Feb. 2011*

- Searched for new methods of predicting plant diseases (specifically soybean rust) based on climate information.
- Co-authored article examining the influence of the El Niño/Southern Oscillation on the development of soybean rust in southern Brazil.

Skills

Crop and weather models	Agro-IBIS, CLM/CESM, DSSAT, WRF
Programming	R, Fortran (77 & 90), Bash, GrADS, CDO, NCO
Spatial software	GDAL, GIS packages in R, Quantum GIS, ArcGIS
Climate data	NCEP, CRU, IPCC's CMIP5 and many other kinds of gridded and irregular climate/land datasets
Satellite imagery	Acquisition, calibration and analysis of SMAP, ASTER, MODIS and Landsat images

Publications

Journal Articles

CO_2 fertilization offsets heat stress and increases rice yield under climate change in Southern Brazil
T. V. dos Santos, T. Twine, S. V. Cuadra
Global Change Biology (2019, submitted)

Effects of land-cover changes on the partitioning of surface energy and water fluxes in Amazonia using high-resolution satellite imagery
G. Oliveira, N. A. Brunsell, E. C. Moraes, Y. E. Shimabukuro, **T. V. dos Santos**, C. Randow, R. G. Aguiar, L. E. O. C. Aragão
Ecohydrology 12.6 (2019). Wiley Online Library

Evaluation of MODIS-based estimates of water-use efficiency in Amazonia
G. Oliveira, N. A. Brunsell, E. C. Moraes, Y. E. Shimabukuro, G. Bertani, **T. V. dos Santos**, L. E. O. C. Aragão
International Journal of Remote Sensing (2017)

Use of MODIS Sensor Images Combined with Reanalysis Products to Retrieve Net Radiation in Amazonia
G. Oliveira, N. A. Brunsell, E. C. Moraes, G. Bertani, **T. V. dos Santos**, Y. E. Shimabukuro, L. E. O. C. Aragão
Sensors 16.7 (2016) p. 956

Early-season warning of soybean rust regional epidemics using El Niño Southern/Oscillation information
E. M. Del Ponte, A. H. N. Maia, **T. V. dos Santos**, E. J. Martins, W. E. Baethgen
International Journal of Biometeorology 55.4 (2011) pp. 575–583

Evaluation of heat fluxes and evapotranspiration estimated by the SEBAL model using data from the ASTER sensor
T. V. dos Santos, D. C. Fontana, R. C. M. Alves
Brazilian Agricultural Research (in Portuguese) 45.5 (2010) pp. 488–496

Book Chapters

Analysis of Precipitation and Evapotranspiration in Atlantic Rainforest Remnants in Southeastern Brazil from Remote Sensing Data
G. Oliveira, E. C. Moraes, N. A. Brunsell, Y. E. Shimabukuro, L. E. O. C. Aragão, G. A. V Mataveli, **dos Santos, T. V.**
Tropical Forests - The Challenges of Maintaining Ecosystem Services while Managing the Landscape, 2016

Methods to Evaluate Land-Atmosphere Exchanges in Amazonia Based on Satellite Imagery and Ground Measurements
G. Oliveira, N. A. Brunsell, E. C. Moraes, Y. E. Shimabukuro, G. A. V. Mataveli, **dos Santos, T. V.** C. Randow, L. E. O. C. Aragão
Tropical Forests: New Edition, 2018

Grants and Fellowships

Full Ph.D. Fellowship — *University of Minnesota*
St. Paul, MN — *2013 – 2017*

- $180,000
- Fellowship granted by the Brazilian Council for Scientific and Technological Development - CNPq. The fellowship covers tuition and all academic fees, as well as health insurance costs, plus a monthly stipend.

Kuehnast Travel Grant — *The American Geophysical Union 2015 Fall Meeting*
San Francisco, CA — *Dec. 2015*

- $800
- Travel grant provided by the Department of Soil, Water, and Climate of the University of Minnesota to cover expenses of attending the 2015 AGU fall meeting, where I presented the first results of my doctorate work.

CESM model tutorial — *National Center for Atmospheric Research - NCAR*
Boulder, CO — *Aug. 2015*

- $500
- Training lessons on simulating the climate system using the Community Earth System Model (CESM). Taken at NCAR's Mesa Lab in Boulder, Colorado from 10 – 14 August 2015. I was granted a NCAR funding to cover lodging and transportation expenses.

Interests

Professional Crop models, land models, remote sensing, climate data, scientific programming, data visualization.
Personal Hiking, movies, photography, bird watching, drums, cooking, urban and mountain biking, home-brewing.