

# Dorivaldo Alexandre Sebastião dos Santos

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Research assistant at Pennsylvania State University's Rock Mechanics lab. Currently pursuing a PhD in Geosciences at Penn State University. I'm interested in Mathematical and Numerical Modeling of Fluid and Heat flow in porous media.

## EDUCATION

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### SOUTHERN METHODIST UNIVERSITY

Dallas, Texas

B.S. in Geophysics and Applied Mathematics, *Cum Laude*  
September 2014 - May 2017

### PENNSYLVANIA STATE UNIVERSITY

State College, Pennsylvania

- PhD in Geosciences (*in progress*)

September 2017 -

## PROFESSIONAL EXPERIENCE

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### SMU GEOTHERMAL LAB

Dallas, Texas

*Undergraduate Research Assistant*  
January 2016 - May 2017

*Advisor: Matthew Hornbach*

- Took temperature and resistivity measurements using the laboratory's ASTM thermometers and high precision resistivity probes (Field work in Northern Rocky Mountains)
- Wrote scripts using the Python and MATLAB programming languages to analyze calibrate the data
- Calculated groundwater flow directions of the island in related areas to the heat flow data sites
- Developed finite difference models to understand the effect of groundwater flow on heat flow

### PSU Rock Mechanics Laboratory

State College, Pennsylvania

*Graduate Research Assistant*

*Advisor: Demian Saffer*

September 2017 - Ongoing

- *Currently developing numerical models to constrain heat and fluid flow and hydrological properties at the Hikurangi subduction zone, New Zealand.*

## ADDITIONAL SKILLS

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- Working knowledge of the Python, MATLAB and C/C++ programming languages as well as GIS software
- Working knowledge of the following parallel computing libraries: MPI, OpenMP and HYPRE
- Working knowledge of Microsoft Office, with a focus on Excel
- Basic knowledge of the following data processing techniques: Fourier analysis/spectral estimation and filtering.
- Basic knowledge of common Machine Learning algorithms
- Fluent in Portuguese, English and Spanish

## HONORS

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- Sonangol's Undergraduate Scholarship (September 2013 - May 2017)
- Undergraduate scholarship from the Institute for the Study of Earth and Man (January 2016 - May 2017)
- Vice-President of Southern Methodist University's GeoClub, AAPG and SEG Student Chapters (May 2016 - May 2017)
- Southern Methodist University's Summer Research Assistantship (May 2016 - August 2016)
- SMU Engaged Learning's Award for Excellence in Undergraduate Research
- SMU Department of Earth Sciences' Goodell-Richards Award