

LUCAS SCHIRBEL



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São Paulo - Brazil



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SKILLS

Software

Python

Microsoft Office

LaTeX

Linux

Shell Scripting

SeisComP

SAC

PyGMT

Illustrator

QGIS

Languages

Portuguese - Native

English - Fluent

Spanish - Intermediate

EDUCATION

Bachelor of Science in Astronomy

University of São Paulo / 03/2012 - 12/2018

Bachelor of Science in Physics

University of São Paulo / 03/2019 - 01/2021

Master of Science in Geophysics

University of São Paulo / 03/2021 - 05/2023

Dissertation: Reservoir Induced Seismicity at the Laúca Dam in Northwestern Angola - Focal Mechanisms and Stress Field Estimation.

Ph.D. Earth and Planetary Sciences

Northwestern University / 09/2024 -

RESEARCH EXPERIENCE

Undergraduate Student Researcher

Dr. Jorge Meléndez - University of São Paulo - 11/2013 - 08/2016

Research in Stellar Astrophysics, focusing on the following topics:

Chemical Abundances in Solar Twins; Field Blue Stragglers; Refractory element trends in host stars and their connection to planet formation; The solar lithium problem.

Computational Analyst

Dr. Marcelo Bianchi - University of São Paulo - 06/2019 - 05/2020

Seismological Data Processing & Analysis using SeisComp3, software development in Python/Shell Script. Characterization of micro-seismicity in dense networks in the Brazilian continental platform.

Junior Researcher

São Paulo Institute of Technological Research - IPT - 07/2020 - 07/2024

Monitoring of Reservoir Induced Seismicity in Southern and Southeastern Brazil. Characterization of seismicity, crustal velocity models, determination of focal mechanisms and modeling of loading stresses.

INTERNSHIPS

Information Technology Intern

University of São Paulo - 09/2016 - 08/2018

ACHIEVEMENTS

- *FAPESP Fellowship - Research* (11/13 - 11/14). Grant #2013/25008-4.
- *CNPq Fellowship - Research* (12/14 - 09/16).
- *First Place in Astronomy Undergraduate Research*. IAG XIX Undergraduate Research Symposium (2014).

ADDITIONAL EDUCATION

- *Introduction to Structured Query Language (SQL) on Coursera*. 15h (09/2020). Credential ID: L95234E6BY8H
- *Seismic travel-time tomography in local networks*. 1-week-long, 30h (05/23).
- *Mechanical Modeling of Induced Seismicity*. 1-week-long, 30h (07/23).

Hardware repair and maintenance, software up-keeping in both graduate and undergraduate labs, assistance to professors and employees. (30h/week).

PUBLICATIONS

HIP 114328: a new refractory-poor and Li-poor solar twin

(Major Contribution)

Jorge Meléndez, **Lucas Schirbel**, TalaWanda R. Monroe, David Yong, Iván Ramírez, Martin Asplund; A&A 567 L3 (2014). DOI: 10.1051/0004-6361/201424172

The Solar Twin Planet Search - I. Fundamental parameters of the stellar sample

(Minor Contribution)

I. Ramírez, J. Meléndez, J. Bean, M. Asplund, M. Bedell, T. Monroe, L. Casagrande, **L. Schirbel**, S. Dreizler, J. Teske, M. Tucci Maia, A. Alves-Brito, P. Baumann; A&A 572 A48 (2014). DOI: 10.1051/0004-6361/201424244

HIP 10725: The first solar twin/analogue field blue straggler

(Major Contribution)

Lucas Schirbel, Jorge Meléndez, Amanda I. Karakas, Iván Ramírez, Matthieu Castro, Marcos A. Faria, Maria Lugaro, Martin Asplund, Marcelo Tucci Maia, David Yong, Louise Howes, José D. do Nascimento; A&A 584 A116 (2015). DOI: 10.1051/0004-6361/201527303

Induced seismicity at the Laúca reservoir, Angola Craton: Focal mechanisms and implications for the stress field in Western Central Africa.

(Major Contribution)

Lucas Schirbel, Marcelo Assumpção, Francisco António Pereira Neto, George Sand França; Journal of African Earth Sciences, Volume 216 (2024). <https://doi.org/10.1016/j.jafrearsci.2024.105327>.

PRESENTATIONS

Realtime detection and location of very local seismicity using SeisComp3

Bianchi, M. B., **Schirbel, Lucas**, Augusto, A.; 07 May - EGU 2020, Vienna, Austria (online, poster presentation)

Induced Seismicity in The Laúca Reservoir - Northwestern Angola

Lucas Schirbel, Marcelo Assumpção, Francisco António Pereira Neto, George Sand França. 03 - 05 October 2022, IV LACSC Assembly, Quito, Ecuador. (Poster Presentation)

A New Case of Reservoir Triggered Seismicity in the Angolan Shield - Laúca Reservoir

Lucas Schirbel, Marcelo Assumpção , Francisco António Pereira Neto, George Sand França.; 14 December 2022, AGU 2022, Chicago, USA. (Poster presentation).

Reservoir Induced Seismicity in Southern Brazil

Lucas Schirbel, Elias Rafn Heimisson, Marcelo Assumpcao, Emilia Brasília; 15 December 2023, AGU 2023, San Francisco, USA. (Poster presentation).

Focal Mechanism Determination of Small Induced Earthquakes in Southern Brazil

Lucas Schirbel, Elias Rafn Heimisson, Marcelo Assumpcao, Emilia Brasília; 27 June 2024, V LACSC Assembly,, San José, Costa Rica. (Oral Presentation)

TEACHING ASSISTANTSHIPS

Volunteer Teaching Assistant

Escola de Verão de Geofísica - IAG USP, 27/02 to 03/03/2023, São Paulo, Brazil.
Teaching Assistant for the Seismology Summer Course.