Dr. Leonardo Uieda

Last updated: March, 2023

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Professional Appointments

2019 – on **Lecturer**, University of Liverpool, UK

2017 – 2022 **Visiting/Affiliate Researcher**, University of Hawai'i at Mānoa, USA

2014 – 2018 **Assistant Professor**, Universidade do Estado do Rio de Janeiro, Brazil

Education

2011 – 2016 **PhD in Geophysics**, Observatório Nacional, Brazil. doi:10.6084/m9.figshare.16883689

2010 – 2011 **MSc in Geophysics**, Observatório Nacional, Brazil. doi:10.6084/m9.figshare.16882300

2004 – 2009 **BSc in Geophysics**, Universidade de São Paulo, Brazil. doi:10.6084/m9.figshare.963547

Open Research Software

2010 – on **Fatiando a Terra** | www.fatiando.org
Python tools for geophysical data processing, forward modeling, and inversion
Role: Project founder, core developer, Steering Council Member

2017 – on **PyGMT** | www.pygmt.org
A Python interface for the Generic Mapping Tools
Role: Project founder, developer, advisor

2017 – on **The Generic Mapping Tools (GMT)** | www.generic-mapping-tools.org
A data processing and mapping toolbox for the Earth, Ocean, and Planetary Science
Role: Community stewardship advisor, set up the website + forum + GitHub workflow

2022 – on **xlandsat** | compgeolab.org/xlandsat
Load Landsat remote sensing scenes in Python and xarray
Role: Creator and sole developer

2009 – 2016 **Tesseroids** | tesseroids.leouieda.com
Forward modeling of gravitational fields in spherical coordinates
Role: Creator and sole developer

Open Educational Resources

2020 – on **Lithosphere Dynamics with Python**. GitHub: leouieda/lithosphere

2020 – on **Remote Sensing with Python**. GitHub: leouieda/remote-sensing

2020 – on **Terrestrial Gravimetry with Python**. GitHub: leouieda/gravity-processing

2021 – on **A Quick Introduction to Machine Learning**. GitHub: leouieda/ml-intro

Resources for older courses and short workshops are available from: leouieda.com/teaching

Community Service

2022 – on **Steering Council Member**, Fatiando a Terra, www.fatiando.org

2022 – on **Advisory Committee Member**, pyOpenSci, www.pyopensci.org

2022 – on **Board Member**, Software Underground, softwareunderground.org

2019 – 2022 **Topic Editor**, Journal of Open Source Software, joss.theoj.org

2019 – 2022 **Advisory Council Member**, EarthArXiv, eartharxiv.org

Grants & Fellowships

2022 – 2024 "Towards individual-grain paleomagnetism: Translating regional-scale geophysics to the nascent field of magnetic microscopy". **Royal Society**. **Uieda, L** (PI), Trindade, RIF (co-PI). Award: IES\R3\213141

2020 Fellowship from the **Software Sustainability Institute**. Award: software.ac.uk/about/fellows

2020 – 2023 "A Sustainable Plan for the Future of the Generic Mapping Tools". **NSF-EAR**. Wessel, P (PI), **Uieda, L** (co-PI). Award: 1948602.

2018 – 2020 "The EarthScope/GMT Analysis and Visualization Toolbox". **NSF-EAR**. Wessel, P (PI), **Uieda, L** (co-PI), Smith-Konter, B (co-PI). Award: 1829371.

Recent Invited Presentations

2021 **Uieda, L**, Li, L, Soler, SR, Pesce, A. Design useful tools that do one thing well and work together: rediscovering the UNIX philosophy while building the Fatiando a Terra project. *AGU 2021*. GitHub: fatiando/agu2021

2021 **Uieda, L**, Soler, SR. Python-based workflows for small-to-medium sized data: what works, what doesn't, and what can be improved. *AGU 2021*. GitHub: compgeolab/agu2021

2021 **Uieda, L**, Soler, SR, Pesce, A. Open-science for gravimetry: tools, challenges, and opportunities. *GFZ Helmholtz Centre Potsdam*. GitHub: leouieda/2021-06-22-gfz

2021 **Uieda, L**, Soler, SR, Pesce, A. Fatiando a Terra: Open-source tools for geophysics. *Geophysical Society of Houston*. GitHub: fatiando/2021-gsh

2020 **Uieda, L**. Geophysical research powered by open-source. *Christian Albrechts Universität zu Kiel*. GitHub: leouieda/2020-07-01-kiel

Publication Highlights

2021 Gradient-boosted equivalent sources. Soler, SR, **Uieda, L**. doi:10.1093/gji/ggab297. EarthArXiv: 10.31223/X58G7C | GitHub: compgeolab/eql-gradient-boosted

2020 Pooch: A friend to fetch your data files. **Uieda, L**, Soler, SR, Rampin, R, van Kemenade, H, Turk, M, Shapero, D, Banihirwe, A, Leeman, J. doi:10.21105/joss.01943. GitHub: fatiando/pooch

2019 The Generic Mapping Tools, Version 6. Wessel, P, Luis, J, **Uieda, L**, Scharroo, R, Wobbe, F, Smith, WHF, Tian, D. doi:10.1029/2019GC008515.

2018 Verde: Processing and gridding spatial data using Green's functions. **Uieda, L**. doi:10.21105/joss.00957. GitHub: fatiando/verde

2017 Fast non-linear gravity inversion in spherical coordinates with application to the South American Moho. **Uieda, L**, Barbosa, VCF. doi:10.1093/gji/ggw390. EarthArXiv: 10.31223/osf.io/9ba4m GitHub: pinga-lab/paper-moho-inversion-tesseroids

2016 Tesseroids: forward modeling gravitational fields in spherical coordinates. **Uieda, L**, Barbosa, VCF, Braitenberg, C. doi:10.1190/geo2015-0204.1. GitHub: pinga-lab/paper-tesseroids

2012 Robust 3D gravity gradient inversion by planting anomalous densities. **Uieda, L**, Barbosa, VCF. doi:10.1190/geo2011-0388.1. GitHub: pinga-lab/paper-planting-densities