

Dr. Leonardo Uieda

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Professional Appointments

- 2019 – present **Lecturer**
Department of Earth, Ocean and Ecological Sciences
School of Environmental Sciences
University of Liverpool, UK
- 2018 – present **Affiliate Researcher**
Department of Earth Sciences
School of Ocean and Earth Science and Technology
University of Hawai‘i at Mānoa, USA
- 2017 – 2018 **Visiting Research Scholar**
Department of Earth Sciences
School of Ocean and Earth Science and Technology
University of Hawai‘i at Mānoa, USA
- 2014 – 2018 **Assistant Professor**
Departamento de Geologia Aplicada
Faculdade de Geologia
Universidade do Estado do Rio de Janeiro, Brazil

Education

- 2011 – 2016 **PhD in Geophysics**, Observatório Nacional, Brazil
- 2010 – 2011 **MSc in Geophysics**, Observatório Nacional, Brazil
- 2008 – 2009 **International Exchange** (1 year), York University, Canada
- 2004 – 2009 **BSc in Geophysics**, Universidade de São Paulo, Brazil

Grants & Fellowships

- 2020 – 2023 NSF-EAR: “A Sustainable Plan for the Future of the Generic Mapping Tools”. PI: Wessel, P, **co-PI: Uieda, L.** *University of Hawai‘i at Mānoa*. Award ID: [1948602](#).
- 2020 Software Sustainability Institute Fellowship. *University of Liverpool*. More information: software.ac.uk/about/fellows/leonardo-uieda
- 2019 – 2020 ESRG Research Support: “Geophysical inversion of GRACE satellite time-lapse gravity”. Internal fund to support the research visit of PhD student Santiago R. Soler. *University of Liverpool*.
- 2018 – 2020 NSF-EAR: “The EarthScope/GMT Analysis and Visualization Toolbox”. PI: Wessel, P, **co-PI: Uieda, L**, co-PI: Smith-Konter, B. *University of Hawai‘i at Mānoa*. Award ID: [1829371](#).

2014 – 2018 QUALITEC/UERJ Grant for training a technician for the Laboratory of Exploration Geophysics
- Universidade do Estado do Rio de Janeiro

Awards & Honors

2017 Brazilian Geophysical Society (SBGf) Award for **Best PhD Thesis** of 2015 – 2017

2016 Universidade do Estado do Rio de Janeiro, Brazil, School of Geology **Teaching Award** given by the graduating class of 2016

2011 – 2015 Brazilian Ministry of Education CAPES **PhD Research Scholarship**

2011 SEG Near Surface Geophysics Section **Student Travel Grant** to present at the SEG Annual Meeting, San Antonio, TX, USA

2011 EAGE **PACE Student Travel Grant** to present at the 73rd EAGE Conference & Exhibition, Vienna, Austria

2010 – 2011 Brazilian Ministry of Education CAPES **Masters Research Scholarship**

2008 Brazilian Geophysical Society (SBGf) **Undergraduate Research Scholarship**

2005 São Paulo Research Foundation (FAPESP) **Undergraduate Research Scholarship**

Open Science

Open-source Software

2010 – present **Fatiando a Terra** | www.fatiando.org
Python tools for geophysical data processing, forward modeling, and inversion
Role: 👤 Creator, main developer, project leadership
Code: 📄 github.com/fatiando



2017 – present **PyGMT** | www.pygmt.org
A Python interface for the Generic Mapping Tools
Role: 👤 Creator and project leadership
Code: 📄 github.com/GenericMappingTools/pygmt

2017 – present **The Generic Mapping Tools (GMT)** | www.generic-mapping-tools.org
A data processing and mapping toolbox for the Earth, Ocean, and Planetary Science
Role: 👤 Core team and community management
Code: 📄 github.com/GenericMappingTools/gmt

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

FAIR Data

2021 **Uieda, L.** Fatiando a Terra Datasets: A curated collection of open (FAIR) geophysics data for tutorials and documentation.
Code: 📄 github.com/fatiando-data

- 2020 **Uieda, L.** Ground gravity data compilation for Australia filtered by survey quality and packaged in CF-compliant netCDF (derived from the Geoscience Australia compilation by [Wynne \(2018\)](#)). doi:[10.6084/m9.figshare.13643837](#)
Code:  github.com/compgeolab/australia-gravity-data
- 2017 **Uieda, L.,** Barbosa, VCF. A gravity-derived Moho model for South America: source code, data, and model results from “Fast non-linear gravity inversion in spherical coordinates with application to the South American Moho”. doi:[10.6084/m9.figshare.3987267](#)
Code:  github.com/pinga-lab/paper-moho-inversion-tesseroids

Academic Service

Editor

2019 – present Topic editor for the *Journal of Open Source Software*

Community Service

2021 – present Software Underground Code of Conduct Working Group

2019 – present EarthArXiv Advisory Council

Committees

2020 – present Department committee for web presence (website, social media, etc), University of Liverpool.

2020 – present Earth Sciences Early Career Academic (ECA) representative, University of Liverpool.

2015 Chairman of the Election Committee for the deans of the University and the School of Geology, Universidade do Estado do Rio de Janeiro.

2015 – 2017 Faculty Advisor for the Society of Exploration Geophysicists (SEG) Student Chapter, Universidade do Estado do Rio de Janeiro.

Reviewer

- Geophysical Journal International
- Journal of Geodesy
- Pure and Applied Geophysics
- Journal of Applied Geophysics
- Geophysical Prospecting
- Geophysics
- Central European Journal of Geosciences
- Computers & Geosciences
- Journal of Open Source Software

Examiner

2022 External PhD thesis examiner (Peter Haas), Christian-Albrechts-Universität zu Kiel.

2022 Internal PhD thesis examiner (Yael Annemiek Engbers), University of Liverpool.

2016 Internal MSc dissertation examiner (Natacha Medeiros Rocha), Universidade do Estado do Rio de Janeiro.




Conference Convener

- 2021 Session: EOS5.3 - The evolving open-science landscape in geosciences: open data, software, publications and community initiatives.
Nijzink, RC, Drost, N, Farquharson, J, Kushnir, A, Pianosi, F, Schymanski, S, **Uieda, L**, Wadsworth, F.
EGU 2021, Vienna, Austria.
- Session: G4.3 - Acquisition and processing of gravity and magnetic field data and their integrative interpretation.
Ebbing, J, Braitenberg, C, Guy, A, Kaban, MK, **Uieda, L**.
EGU 2021, Vienna, Austria.
- 2019 Townhall: Update and Future Directions of the Open-Source Software Initiative.
Uieda, L, Heagy, LJ, Krischer, L, Gassmoeller, R, Sullivan, CB.
AGU 2019, San Francisco, USA.
- Session: NS21A - A Tour of Open-Source Software Packages for the Geosciences.
Heagy, LJ, Gassmoeller, R, **Uieda, L**, Klump, JF.
AGU 2019, San Francisco, USA.
- 2018 Townhall: The role of an open-source software initiative within the AGU.
Heagy, LJ, Krischer, L, **Uieda, L**.
AGU 2018, Washington DC, USA.












Teaching

Undergraduate






- 2020 – present ENVS398: Global Geophysics and Geodynamics
Teaching lithosphere dynamics (50% of module)
Module coordinator from 2021
University of Liverpool
- 2020 – present ENVS258: Environmental Geophysics
Teaching remote sensing, gravimetry, and Python programming (~50% of module)
University of Liverpool
- 2020 – present ENVS386: Geophysical Data Modelling
Teaching lectures on non-linear inversion and machine learning
University of Liverpool
- 2020 – present ENVS101/106: Study Skills and GIS (tutorial)
Leading small group tutorials and a Python programming workshop
University of Liverpool
- 2019 – present ENVS363: Geophysical Exploration Techniques (field)
Part of the teaching team for geophysical field methods
University of Liverpool
- 2019 – 2021 ENVS123: Introduction to Geoscience and Earth History
Lectures on: Earth's internal structure; gravity and isostasy
University of Liverpool

- 2014 – 2016 Special Mathematics I: Introduction to Programming and Numerical Analysis
Universidade do Estado do Rio de Janeiro
 Code:  github.com/mat-esp/about
- 2014 – 2016 Geophysics I: Gravity and magnetic methods
Universidade do Estado do Rio de Janeiro
 Code:  github.com/leouieda/geofisica1
- 2014 – 2016 Geophysics II: Exploration Seismology
Universidade do Estado do Rio de Janeiro
 Code:  github.com/leouieda/geofisica2
- 2015 Introduction to Geology
Universidade do Estado do Rio de Janeiro

Workshops & Short Courses

- 2021 The Generic Mapping Tools for Geodesy
 UNAVCO (online)
 Code:  github.com/GenericMappingTools/2021-unavco-course
- 2020 Let's build a geophysical inversion with Python
 IRTG-2379 Graduate School: Modern Inverse Problems
 RWTH Aachen University (online)
 Code:  github.com/compgeolab/2020-aachen-inverse-problems
- The Generic Mapping Tools for Geodesy
 UNAVCO (online)
 Recording:  youtube.com/watch?v=EQgxDmCXvj4
 Code:  github.com/GenericMappingTools/2020-unavco-course
- From scattered data to gridded products using Verde
 Transform 2020 (online)
 Recording:  youtube.com/watch?v=-xZdNdvzm3E
 Code:  github.com/fatiando/transform2020
- 2019 Best Practices for Developing and Sustaining Your Open-Source Research Software
 AGU Fall Meeting 2019
 Code:  github.com/agu-ossi/2019-agu-oss
- Become a Generic Mapping Tools Contributor Even If You Can't Code
 AGU Fall Meeting 2019
- The Generic Mapping Tools for Geodesy
 Scripps Institution of Oceanography and UNAVCO
 Recording:  youtube.com/watch?v=uPUt4_kd6m8
 Code:  github.com/GenericMappingTools/2019-unavco-course
- Introduction to Python Workshop (Earth Sciences REU program)
 Department of Geology and Geophysics, University of Hawai'i at Mānoa
 Code:  github.com/leouieda/2019-06-reu-python
- 2018 Best Practices for Modern Open-Source Research Codes
 AGU Fall Meeting 2018
 Code:  github.com/agu-ossi/2018-agu-oss

Git and Github: What are their uses? Are they worth the effort? Let's find out!
ASPRS UHM Student Chapter, University of Hawai'i at Mānoa

- 2017 Introduction to Python
Department of Geology and Geophysics, University of Hawai'i at Mānoa
 Code:  github.com/leouieda/python-hawaii-2017
- 2016 Python for Geologists (SAGEO)
Faculdade de Geologia, Universidade do Estado do Rio de Janeiro
 Code:  github.com/leouieda/python-geologia-2016
- Python for Earth Scientists (IAG Summer School)
Departamento de Geofísica, Universidade de São Paulo
 Code:  github.com/leouieda/verao2016
- 2014 Introduction to Geophysical Inversion
Instituto de Geociências, Universidade de Brasília
 Code:  github.com/pinga-lab/inversao-unb-2014
- 2011 Introduction to Geophysical Inversion (IAG Summer School)
Departamento de Geofísica, Universidade de São Paulo
 Code:  github.com/pinga-lab/inversao-iag-2012

Student supervision

PhD (main advisor)

- 2021 – present India Uppal
 University of Liverpool, UK.
 Co-advisors: Vanderlei C. Oliveira Jr., Richard Holme

PhD (co-advisor)

- 2021 – present Gelson Ferreira de Souza Junior
 Universidade de São Paulo, Brazil.
 Advisor: Ricardo I.F. Trindade
- 2017 – 2022 Santiago R. Soler
 Universidad Nacional de San Juan, Argentina.
 Advisor: Mario E. Gimenez

Master's

- 2020 – 2021 Aidan Hernaman
 University of Liverpool, UK.

Undergraduate

- 2021 – 2022 Sarah Askevold, Laura Nicholls, and Hamed R.H. Al-Salehi
 University of Liverpool, UK.
- 2020 – 2021 Majed M.A. Abura, Ali A.A. Alhazmi, Daniel P. Gilbert, and Mustafa M.M. Alordowny
 University of Liverpool, UK.

- 2019 – 2020 Lottie Cooper, Steven Heer, Charles Thomson, and Alexander Borges
University of Liverpool, UK.
- 2015 – 2017 Vinicius V. Rigueti
Universidade do Estado do Rio de Janeiro, Brazil.

Media & Outreach

- 2018 Interviewed by the geoscience podcast *Don't Panic Geocast*, episode 166 “You are headed to a warm and sunny place”: dontpanicgeocast.com/?p=638
- 2017 Volunteer for the *Hour of Code* at Salt Lake Elementary School, Honolulu, USA.
- 2016 Interviewed by the geoscience podcast *Undersampled Radio*, episode “Open Sourcery”: undersampledrad.io/home/2016/7/open-sourcery

Presentations

Invited & Keynotes

- 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*, Online.
Code: github.com/fatiando/agu2021
- 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*, Online.
Code: github.com/compgeolab/agu2021
- Uieda, L.** Academia e software livre: Desafios e oportunidades no Brasil e no exterior, *National Observatory's SEG and EAGE Student Chapter*, Rio de Janeiro, Brazil.
Code: github.com/leouieda/2021-07-22-on
Recording: youtube.com/watch?v=r2x-DN6laj8
- Uieda, L.**, Soler, SR, Pesce, A. Open-science for gravimetry: tools, challenges, and opportunities, *GFZ Helmholtz Centre Potsdam*, Germany.
Code: github.com/leouieda/2021-06-22-gfz
Slides: doi.org/10.6084/m9.figshare.14838477
Recording: youtube.com/watch?v=z-5dvWfB_SM
- Uieda, L.**, Soler, SR, Pesce, A. Fatiando a Terra: Open-source tools for geophysics, *Geophysical Society of Houston*, Houston, USA.
Code: github.com/fatiando/2021-gsh
- 2020 **Uieda, L.** Geophysical research powered by open-source, *Christian Albrechts Universität zu Kiel*, Kiel, Germany.
Slides: www.leouieda.com/2020-07-01-kiel
- Uieda, L.** Geophysical research powered by open-source, *Departamento de Geofísica, IAG, Universidade de São Paulo*, São Paulo, Brazil.
Recording: youtube.com/watch?v=VqI8BX1Yg54
Slides: www.leouieda.com/2020-06-18-usp

Uieda, L. Geophysical research powered by open-source, *Technische Universität Bergakademie Freiberg*, Freiberg, Germany.

Slides:  www.leouieda.com/2020-06-04-freiberg

Uieda, L. Geophysical research powered by open-source, *Geographic Data Science Lab, University of Liverpool*, Liverpool, UK.

Slides:  www.leouieda.com/liverpool-gdsl-2020

2017 **Uieda, L, Wessel, P.** Nurturing reliable and robust open-source scientific software, *AGU Fall Meeting 2017*, New Orleans, USA.

Recording:  youtube.com/watch?v=0GO4ZZ5Ry6M

2016 **Uieda, L.** Fatiando a Terra: construindo uma base para ensino e pesquisa de geofísica, *Observatório Nacional*, Rio de Janeiro, Brazil.

Slides:  doi.org/10.6084/m9.figshare.1381870

2015 **Uieda, L.** Fatiando a Terra: construindo uma base para ensino e pesquisa de geofísica, *Universidade de São Paulo*, São Paulo, Brazil.

Slides:  doi.org/10.6084/m9.figshare.1381870

Other Presentations

2021 **Uieda, L, Soler, SR, Pesce, A, Perozzi, L, Wieczorek, MA.** Harmonica and Boule: Modern Python tools for geophysical gravimetry, *EGU 2021*, Online. doi:[10.5194/egusphere-egu21-8291](https://doi.org/10.5194/egusphere-egu21-8291).

Code:  github.com/fatiando/egu2021


2020 **Uieda, L, Soler, SR.** Evaluating the accuracy of equivalent-source predictions using cross-validation, *EGU 2020*, Vienna, Austria. doi:[10.5194/egusphere-egu2020-15729](https://doi.org/10.5194/egusphere-egu2020-15729).

Slides:  doi.org/10.6084/m9.figshare.12245372

2019 **Uieda, L, Wessel, P.** PyGMT: Accessing the Generic Mapping Tools from Python, *AGU 2019*, San Francisco, USA.

Poster:  doi.org/10.6084/m9.figshare.11320280

Uieda, L. Building the foundations for open-source geophysics, *Department of Earth, Ocean and Ecological Sciences, University of Liverpool*, UK.

Slides:  doi.org/10.6084/m9.figshare.10255832

2018 **Uieda, L, Xu, X, Wessel, P, Sandwell, DT.** Coupled Interpolation of Three-component GPS Velocities, *AGU 2018*, Washington DC, USA.

Poster:  doi.org/10.6084/m9.figshare.7440683

Uieda, L. Machine Learning Lessons for Geophysics, *Department of Earth Sciences, University of Hawai'i at Mānoa*, Honolulu, USA.


Slides:  doi.org/10.6084/m9.figshare.7203344


Uieda, L, Wessel, P. Building an object-oriented Python interface for the Generic Mapping Tools, *Scipy 2018*, Austin, USA.






Recording:  youtube.com/watch?v=6wMtfZXfTRM

Slides:  doi.org/10.6084/m9.figshare.6814052

Uieda, L, Sandwell, DT, Wessel, P. Joint Interpolation of 3-component GPS Velocities Constrained by Elasticity, *AOGS 15th Annual Meeting*, Honolulu, USA.






Slides:  doi.org/10.6084/m9.figshare.6387467



- Uieda, L.**, Wessel, P. Integrating the Generic Mapping Tools with the Scientific Python Ecosystem, *AOGS 15th Annual Meeting*, Honolulu, USA.
Poster:  doi.org/10.6084/m9.figshare.6399944
- 2017 **Uieda, L.**, Wessel, P. A modern Python interface for the Generic Mapping Tools, *AGU Fall Meeting 2017*, New Orleans, USA.
Poster:  doi.org/10.6084/m9.figshare.5662411
- Uieda, L.**, Wessel, P. Bringing the Generic Mapping Tools to Python, *Scipy 2017*, Austin, USA.
Recording:  youtube.com/watch?v=93M4How7R24
Slides:  doi.org/10.6084/m9.figshare.7635833
- Uieda, L.** Inverting gravity to map the Moho: A new method and the open source software that made it possible, *Department of Geology and Geophysics, University of Hawai'i at Mānoa*, Honolulu, USA.
Slides:  doi.org/10.6084/m9.figshare.4779766
- 2014 **Uieda, L.**, Oliveira Jr, VC, Barbosa, VCF. Using Fatiando a Terra to solve inverse problems in geophysics, *Scipy 2014*, Austin, USA.
Poster:  doi.org/10.6084/m9.figshare.1089987
- Uieda, L.**, Barbosa, VCF. Gravity inversion in spherical coordinates using tesserooids, *EGU General Assembly 2014*, Vienna, Austria.
Slides:  doi.org/10.6084/m9.figshare.1155457
- 2013 **Uieda, L.**, Oliveira Jr, VC, Barbosa, VCF. Modeling the Earth with Fatiando a Terra, *Scipy 2013*, Austin, USA. doi:10.25080/Majora-8b375195-010.
Recording:  youtube.com/watch?v=Ec38h1oB8cc
Slides:  www.leouieda.com/scipy2013/?theme=night
- Uieda, L.**, Barbosa, VCF. 3D magnetic inversion by planting anomalous densities, *AGU Meeting of the Americas*, Cancun, Mexico.
Slides:  doi.org/10.6084/m9.figshare.703651
- 2012 Carlos, DU, **Uieda, L.**, Li, Y, Barbosa, VCF, Braga, MA, Angeli, G, Peres, G. Iron ore interpretation using gravity-gradient inversions in the Carajás, Brazil, *SEG Annual Meeting 2012*, Las Vegas, USA. doi:10.1190/segam2012-0525.1.
Slides:  doi.org/10.6084/m9.figshare.156865
- Uieda, L.**, Barbosa, VCF. Use of the “shape-of-anomaly” data misfit in 3D inversion by planting anomalous densities, *SEG Annual Meeting 2012*, Las Vegas, USA. doi:10.1190/segam2012-0383.1.
Slides:  doi.org/10.6084/m9.figshare.156864
- Uieda, L.**, Barbosa, VCF. Rapid 3D inversion of gravity and gravity gradient data to test geologic hypotheses, *International Symposium on Gravity, Geoid and Height Systems*, Venice, Italy.
Slides:  doi.org/10.6084/m9.figshare.156859
- 2011 **Uieda, L.**, Barbosa, VCF. Robust 3D gravity gradient inversion by planting anomalous densities, *SEG Annual Meeting 2011*, San Antonio, USA. doi:10.1190/1.3628201.
Slides:  doi.org/10.6084/m9.figshare.156863
- Uieda, L.**, Barbosa, VCF. 3D gravity inversion by planting anomalous densities, *International Congress of the Brazilian Geophysical Society*, Rio de Janeiro, Brazil. doi:10.1190/sbgf2011-179.
Slides:  doi.org/10.6084/m9.figshare.156861




- Uieda, L.**, Bomfim, EP, Braitenberg, C, Molina, E. Optimal forward calculation method of the Marussi tensor due to a geologic structure at GOCE height, *4th International GOCE User Workshop*, Munich, Germany.
Poster:  doi.org/10.6084/m9.figshare.92624
- Uieda, L.**, Barbosa, VCF. 3D gravity gradient inversion by planting density anomalies, *73th EAGE Conference and Exhibition incorporating SPE EUROPEC*, Vienna, Austria.
doi:[10.3997/2214-4609.20149567](https://doi.org/10.3997/2214-4609.20149567).
Poster:  doi.org/10.6084/m9.figshare.91511
- 2010 **Uieda, L.**, Ussami, N, Braitenberg, C. Computation of the gravity gradient tensor due to topographic masses using tesseroids, *AGU Meeting of the Americas*, Foz do Iguaçu, Brazil.
Slides:  doi.org/10.6084/m9.figshare.156858
- 2008 **Uieda, L.**, Ussami, N. Utilização de tesseróides na modelagem de dados de gradiometria gravimétrica, *XIII Simpósio de Iniciação Científica do IAG-USP*, São Paulo, Brazil.
Poster:  doi.org/10.6084/m9.figshare.4779760
- 2006 **Uieda, L.**, D'Agrella-Filho, MS. Paleomagnetismo e mineralogia magnética dos diques cambrianos de Maravilhas e Prata (PB), *XI Simpósio de Iniciação Científica do IAG/USP*, São Paulo, Brazil.
Poster:  doi.org/10.6084/m9.figshare.4779769






Publications

Peer-reviewed Papers

- 2021 Soler, SR, **Uieda, L.** Gradient-boosted equivalent sources. *Geophysical Journal International*. doi:[10.1093/gji/ggab297](https://doi.org/10.1093/gji/ggab297).
Preprint:  doi.org/10.31223/X58G7C
Code:  github.com/compgeolab/eql-gradient-boosted
- 2020  **Uieda, L.**, Soler, SR, Rampin, R, van Kemenade, H, Turk, M, Shapero, D, Banihirwe, A, Leeman, J. Pooch: A friend to fetch your data files. *Journal of Open Source Software*. doi:[10.21105/joss.01943](https://doi.org/10.21105/joss.01943).
Code:  github.com/fatiando/pooch
- 2019  Wessel, P, Luis, J, **Uieda, L.**, Scharroo, R, Wobbe, F, Smith, WHF, Tian, D. The Generic Mapping Tools, Version 6. *Geochemistry, Geophysics, Geosystems*. doi:[10.1029/2019GC008515](https://doi.org/10.1029/2019GC008515).

Soler, SR, Pesce, A, Gimenez, ME, **Uieda, L.** Gravitational field calculation in spherical coordinates using variable densities in depth. *Geophysical Journal International*. doi:[10.1093/gji/ggz277](https://doi.org/10.1093/gji/ggz277).
Preprint:  doi.org/10.31223/osf.io/3548g
Code:  github.com/pinga-lab/tesseractoid-variable-density

Zhao, G, Chen, B, **Uieda, L.**, Liu, J, Kaban, MK, Chen, L, Guo, R. Efficient 3D large-scale forward-modeling and inversion of gravitational fields in spherical coordinates with application to lunar mascons. *Journal of Geophysical Research: Solid Earth*. doi:[10.1029/2019jb017691](https://doi.org/10.1029/2019jb017691).
Preprint:  doi.org/10.31223/osf.io/dz9fj
- 2018  **Uieda, L.** Verde: Processing and gridding spatial data using Green's functions. *Journal of Open Source Software*. doi:[10.21105/joss.00957](https://doi.org/10.21105/joss.00957).
Code:  github.com/fatiando/verde

- 2017 **Uieda, L**, Barbosa, VCF. Fast non-linear gravity inversion in spherical coordinates with application to the South American Moho, *Geophysical Journal International*, doi:[10.1093/gji/ggw390](https://doi.org/10.1093/gji/ggw390).
Preprint:  doi.org/10.31223/osf.io/9ba4m
Code:  github.com/pinga-lab/paper-moho-inversion-tesseroids
- 2016 **Uieda, L**, Barbosa, VCF, Braitenberg, C. Tesseroids: forward modeling gravitational fields in spherical coordinates, *Geophysics*, doi:[10.1190/geo2015-0204.1](https://doi.org/10.1190/geo2015-0204.1).
Code:  github.com/pinga-lab/paper-tesseroids
- Carlos, DU, **Uieda, L**, Barbosa, VCF. How two gravity-gradient inversion methods can be used to reveal different geologic features of ore deposit - A case study from the Quadrilátero Ferrífero (Brazil), *Journal of Applied Geophysics*, doi:[10.1016/j.jappgeo.2016.04.011](https://doi.org/10.1016/j.jappgeo.2016.04.011).
- 2015 @ Oliveira Jr, VC, Sales, DP, Barbosa, VCF, **Uieda, L**. Estimation of the total magnetization direction of approximately spherical bodies, *Nonlinear Processes in Geophysics*, doi:[10.5194/npg-22-215-2015](https://doi.org/10.5194/npg-22-215-2015).
Code:  github.com/pinga-lab/Total-magnetization-of-spherical-bodies
- 2014 Carlos, DU, **Uieda, L**, Barbosa, VCF. Imaging iron ore from the Quadrilátero Ferrífero (Brazil) using geophysical inversion and drill hole data, *Ore Geology Reviews*, doi:[10.1016/j.oregeorev.2014.02.011](https://doi.org/10.1016/j.oregeorev.2014.02.011).
- 2013 Melo, FF, Barbosa, VCF, **Uieda, L**, Oliveira Jr, VC, Silva, JBC. Estimating the nature and the horizontal and vertical positions of 3D magnetic sources using Euler deconvolution, *Geophysics*, doi:[10.1190/geo2012-0515.1](https://doi.org/10.1190/geo2012-0515.1).
- Oliveira Jr, VC, Barbosa, VCF, **Uieda, L**. Polynomial equivalent layer, *Geophysics*, doi:[10.1190/geo2012-0196.1](https://doi.org/10.1190/geo2012-0196.1).
- 2012 **Uieda, L**, Barbosa, VCF. Robust 3D gravity gradient inversion by planting anomalous densities, *Geophysics*, doi:[10.1190/geo2011-0388.1](https://doi.org/10.1190/geo2011-0388.1).
Code:  github.com/pinga-lab/paper-planting-densities

Peer-reviewed Conference Proceedings

- 2014 Melo, FF, Barbosa, VCF, **Uieda, L**, Oliveira Jr, VC, Silva, JBC. A Single Euler Solution Per Anomaly, *76th EAGE Conference and Exhibition 2014*, doi:[10.3997/2214-4609.20140891](https://doi.org/10.3997/2214-4609.20140891).
- 2013 **Uieda, L**, Oliveira Jr, VC, Barbosa, VCF. Modeling the Earth with Fatiando a Terra, *Proceedings of the 12th Python in Science Conference*. doi:[10.25080/Majora-8b375195-010](https://doi.org/10.25080/Majora-8b375195-010).
- 2012 **Uieda, L**, Barbosa, VCF. Use of the “shape-of-anomaly” data misfit in 3D inversion by planting anomalous densities, *SEG Technical Program Expanded Abstracts*, doi:[10.1190/segam2012-0383.1](https://doi.org/10.1190/segam2012-0383.1).
- Carlos, DU, **Uieda, L**, Li, Y, Barbosa, VCF, Braga, MA, Angeli, G, Peres, G. Iron ore interpretation using gravity-gradient inversions in the Carajás, Brazil. *SEG Technical Program Expanded Abstracts*, doi:[10.1190/segam2012-0525.1](https://doi.org/10.1190/segam2012-0525.1).
- 2011 **Uieda, L**, Bomfim, EP, Braitenberg, C, Molina, E. Optimal forward calculation method of the Marussi tensor due to a geologic structure at GOCE height, *Proceedings of the 4th International GOCE User Workshop*.
- Uieda, L**, Barbosa, VCF. Robust 3D gravity gradient inversion by planting anomalous densities, *SEG Technical Program Expanded Abstracts*, doi:[10.1190/1.3628201](https://doi.org/10.1190/1.3628201).


Uieda, L., Barbosa, VCF. 3D gravity inversion by planting anomalous densities. *12th International Congress of the Brazilian Geophysical Society*, doi:[10.1190/sbgf2011-179](https://doi.org/10.1190/sbgf2011-179).


Uieda, L., Barbosa, VCF. 3D gravity gradient inversion by planting density anomalies. *73th EAGE Conference and Exhibition incorporating SPE EUROPEC*, doi:[10.3997/2214-4609.20149567](https://doi.org/10.3997/2214-4609.20149567).

Carlos, DU, **Uieda, L.**, Barbosa, VCF, Braga, MA, Gomes, AAS. In-depth imaging of an iron orebody from Quadrilátero Ferrífero using 3D gravity gradient inversion, *SEG Technical Program Expanded Abstracts*, doi:[10.1190/1.3628219](https://doi.org/10.1190/1.3628219).

Carlos, DU, Barbosa, VCF, **Uieda, L.**, Braga, MA. Inversão de Dados de Aeroradiometria Gravimétrica 3D-FTG Aplicada a Exploração Mineral na Região do Quadrilátero Ferrífero, *12th International Congress of the Brazilian Geophysical Society*, doi:[10.1190/sbgf2011-243](https://doi.org/10.1190/sbgf2011-243).

Non-peer-reviewed Papers

2017 Ⓢ **Uieda, L.** Step-by-step NMO correction, *The Leading Edge*, doi:[10.1190/tle36020179.1](https://doi.org/10.1190/tle36020179.1).
Code:  github.com/pinga-lab/nmo-tutorial

2014 Ⓢ **Uieda, L.**, Oliveira Jr, VC, Barbosa, VCF. Geophysical tutorial: Euler deconvolution of potential-field data, *The Leading Edge*, doi:[10.1190/tle33040448.1](https://doi.org/10.1190/tle33040448.1).
Code:  github.com/pinga-lab/paper-tle-euler-tutorial

Preprints

2019 Ⓢ Barba, LA, Bazan, J, Brown, J, Guimera, RV, Gymrek, M, Alex Hanna, Heagy, LJ, Huff, KD, Katz, DS, Madan, CR, Moerman, KM, Niemeyer, KE, Poulson, JL, Prins, P, Ram, K, Rokem, A, Smith, AM, Thiruvathukal, GK, Thyng, KM, **Uieda, L.**, Wilson, BE, Yehudi, Y. Giving software its due through community-driven review and publication. *OSF Preprints*. doi:[10.31219/osf.io/f4vx6](https://doi.org/10.31219/osf.io/f4vx6)

Miscellaneous

Affiliations

2020 – present Royal Astronomical Society
2014 – present Software Underground
2014 – present European Geosciences Union
2010 – present American Geophysical Union
2011 – 2019 Society of Exploration Geophysicists

Languages

Portuguese Native
English IELTS: CEFR Level C2 (mastery or proficiency) obtained in 2019