

# Dr. Leonardo Uieda

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Research group: [www.compgeolab.org](http://www.compgeolab.org)  
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Liverpool, L69 3GP  
United Kingdom

## Professional Appointments

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- 2019 – on     **Lecturer**  
Department of Earth, Ocean and Ecological Sciences  
School of Environmental Sciences  
University of Liverpool, UK
- 2018 – on     **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

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- 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

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- 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](http://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

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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

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### Open-source Software

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



2017 – on **PyGMT** | [www.pygmt.org](http://www.pygmt.org)  
 A Python interface for the Generic Mapping Tools  
 Role: 👤 Creator and project leadership  
 Code: 📄 [github.com/GenericMappingTools/pygmt](https://github.com/GenericMappingTools/pygmt)

2017 – on **The Generic Mapping Tools (GMT)** | [www.generic-mapping-tools.org](http://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](https://github.com/GenericMappingTools/gmt)

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

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### Editor

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

### Community Service

- 2021 – on Software Underground Code of Conduct Working Group
- 2019 – on EarthArXiv Advisory Council

### Committees

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












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### Undergraduate






- 2020 – on      ENVS398: Global Geophysics and Geodynamics  
Teaching lithosphere dynamics (50% of module)  
Module coordinator from 2021  
*University of Liverpool*
- 2020 – on      ENVS258: Environmental Geophysics  
Teaching remote sensing, gravimetry, and Python programming (~50% of module)  
*University of Liverpool*
- 2020 – on      ENVS386: Geophysical Data Modelling  
Teaching lectures on non-linear inversion and machine learning  
*University of Liverpool*
- 2020 – on      ENVS101/106: Study Skills and GIS (tutorial)  
Leading small group tutorials and a Python programming workshop  
*University of Liverpool*
- 2019 – on      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](https://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](https://github.com/leouieda/geofisica1)
- 2014 – 2016 Geophysics II: Exploration Seismology  
*Universidade do Estado do Rio de Janeiro*  
 Code:  [github.com/leouieda/geofisica2](https://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](https://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](https://github.com/compgeolab/2020-aachen-inverse-problems)
- The Generic Mapping Tools for Geodesy  
*UNAVCO (online)*  
 Recording:  [youtube.com/watch?v=EQgxDmCXvj4](https://youtube.com/watch?v=EQgxDmCXvj4)  
 Code:  [github.com/GenericMappingTools/2020-unavco-course](https://github.com/GenericMappingTools/2020-unavco-course)
- From scattered data to gridded products using Verde  
*Transform 2020 (online)*  
 Recording:  [youtube.com/watch?v=-xZdNdvzm3E](https://youtube.com/watch?v=-xZdNdvzm3E)  
 Code:  [github.com/fatiando/transform2020](https://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](https://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](https://youtube.com/watch?v=uPUt4_kd6m8)  
 Code:  [github.com/GenericMappingTools/2019-unavco-course](https://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](https://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](https://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](https://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](https://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](https://github.com/leouieda/verao2016)
- 2014 Introduction to Geophysical Inversion  
*Instituto de Geociências, Universidade de Brasília*  
 Code:  [github.com/pinga-lab/inversao-unb-2014](https://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](https://github.com/pinga-lab/inversao-iag-2012)

## Student supervision

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### PhD (main advisor)

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

### PhD (co-advisor)

- 2021 – on 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. Riguete  
Universidade do Estado do Rio de Janeiro, Brazil.

## Media & Outreach

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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](https://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](https://undersampledrad.io/home/2016/7/open-sourcery)

## Presentations

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### 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](https://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](https://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](https://github.com/leouieda/2021-07-22-on)

Recording:  [youtube.com/watch?v=r2x-DN6laj8](https://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](https://github.com/leouieda/2021-06-22-gfz)

Slides:  [doi.org/10.6084/m9.figshare.14838477](https://doi.org/10.6084/m9.figshare.14838477)

Recording:  [youtube.com/watch?v=z-5dvWfB\\_SM](https://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](https://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](https://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](https://youtube.com/watch?v=VqI8BX1Yg54)

Slides:  [www.leouieda.com/2020-06-18-usp](https://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](http://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](http://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](https://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](https://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](https://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](https://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](https://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](https://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](https://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](https://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](https://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](https://youtube.com/watch?v=6wMtfZXfTRM)






Slides:  [doi.org/10.6084/m9.figshare.6814052](https://doi.org/10.6084/m9.figshare.6814052)

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

Slides:  [doi.org/10.6084/m9.figshare.6387467](https://doi.org/10.6084/m9.figshare.6387467)













- Uieda, L**, Wessel, P. Integrating the Generic Mapping Tools with the Scientific Python Ecosystem, *AOGS 15<sup>th</sup> Annual Meeting*, Honolulu, USA.  
Poster:  [doi.org/10.6084/m9.figshare.6399944](https://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](https://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](https://youtube.com/watch?v=93M4How7R24)  
Slides:  [doi.org/10.6084/m9.figshare.7635833](https://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](https://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](https://doi.org/10.6084/m9.figshare.1089987)
- Uieda, L**, Barbosa, VCF. Gravity inversion in spherical coordinates using tesseroids, *EGU General Assembly 2014*, Vienna, Austria.  
Slides:  [doi.org/10.6084/m9.figshare.1155457](https://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](https://youtube.com/watch?v=Ec38h1oB8cc)  
Slides:  [www.leouieda.com/scipy2013/?theme=night](http://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](https://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](https://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](https://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](https://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](https://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](https://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](https://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](https://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.  
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- 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.  
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- 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.  
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## Publications

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### 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](https://doi.org/10.31223/X58G7C)  
Code:  [github.com/compgeolab/eql-gradient-boosted](https://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](https://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](https://doi.org/10.31223/osf.io/3548g)  
Code:  [github.com/pinga-lab/tesseract-variable-density](https://github.com/pinga-lab/tesseract-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).  
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- 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](https://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](https://doi.org/10.31223/osf.io/9ba4m)  
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- 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).  
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- 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](https://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](https://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).



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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](https://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](https://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

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### Professional society membership

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

### Languages

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