

Santiago Rubén Soler

PhD in Geophysics

Computer-oriented geoscience lab

email santiago.r.soler@gmail.com

website www.santisoler.com

ORCID [0000-0001-9202-5317](https://orcid.org/0000-0001-9202-5317)

GitHub github.com/santisoler

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Professional Appointments

- | | |
|-------------|---|
| 2022 | Coding Trainer
Code to Communicate Initiative
NSF-funded bilingual program for grad-students |
| 2017 – 2019 | Assistant Professor of Practice
Facultad de Ciencias Exactas, Físicas y Naturales,
Universidad Nacional de San Juan, San Juan, Argentina |
| 2013 – 2015 | Student Teacher
Facultad de Ciencias Exactas, Ingeniería y Agrimensura,
Universidad Nacional de Rosario, Rosario, Argentina |

Education

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|-------------|--|
| 2017 – 2022 | PhD in Geophysics
Facultad de Ciencias Exactas, Físicas y Naturales,
Universidad Nacional de San Juan, San Juan, Argentina |
| 2009 – 2015 | Licentiate in Physics
Facultad de Ciencias Exactas, Ingeniería y Agrimensura,
Universidad Nacional de Rosario, Rosario, Argentina |

Awards and Scholarships

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|-------------|--|
| 2017 – 2022 | PhD Scholarship from CONICET |
| 2019 | Early Career Scientist's Travel Support for EGU2020 General Assembly |
| 2016 | Fundación Josefina Prats Award - Licenciatura en Física |
| 2012 | University Scholarship granted by Fundación del Banco de Santa Fe |
| 2012 | Santander Río National Award to Academic Merit 2012 |
| 2012 | Josefina Prats Award - IFIR 2012 |

Certifications

2021 Certified Software Carpentry Instructor

Teaching Experience

UNDERGRADUATE COURSES

- 2017 – 2019 **Statistical Mechanics**
Department of Geophysics and Astronomy,
Facultad de Ciencias Exactas, Físicas y Naturales,
Universidad Nacional de San Juan
- 2017 – 2019 **Physics I**
Department of Geophysics and Astronomy,
Facultad de Ciencias Exactas, Físicas y Naturales,
Universidad Nacional de San Juan
- 2013 – 2015 **Physics I**
Physics Department,
Escuela de Ciencias Exactas y Naturales
Facultad de Ciencias Exactas, Ingeniería y Agrimensura,
Universidad Nacional de Rosario
- 2013 – 2015 **Introduction to Science**
Physics Department,
Escuela de Ciencias Exactas y Naturales
Facultad de Ciencias Exactas, Ingeniería y Agrimensura,
Universidad Nacional de Rosario

WORKSHOPS AND TUTORIALS

- 2021 **Tutorial: Processing gravity and magnetic data with Harmonica**
[Santiago Soler](#), [Andrea Balza Morales](#) and [Agustina Pesce](#)
Transform21, Software Underground
<https://youtu.be/0bxZcAr6bw>
- 2020 **Introducción a Python para Científicos**
Universidad Nacional de San Juan, San Juan, Argentina
https://youtu.be/LS_e9gqTM2s
- 2020 **Tutorial: From scattered data to gridded products using Verde**
[Leonardo Uieda](#) and [Santiago Soler](#)
Transform 2020, Software Underground
<https://youtu.be/-xZdNdvzm3E>
- 2017 **Taller Introductorio a LaTeX: Cómo producir documentos de calidad**
[Agustina Pesce](#) and [Santiago Soler](#)
Universidad Nacional de San Juan, San Juan, Argentina

Publications

PEER-REVIEWED SCIENTIFIC ARTICLES

- 2021 **Gradient-boosted equivalent sources**, *Geophysical Journal International*
[Santiago Soler](#) and [Leonardo Uieda](#)
doi: [10.1093/gji/ggab297](https://doi.org/10.1093/gji/ggab297)
- 2020 **Pooch: A friend to fetch your data files**, *Journal of Open-Source Software*
[Leonardo Uieda](#), [Santiago Soler](#), Rémi Rampin, Hugo vanKemenade, Matthew Turk, Daniel Shapero, Anderson Banihirwe and John Leeman
doi: [10.21105/joss.01943](https://doi.org/10.21105/joss.01943)
- 2019 **Gravitational field calculation in spherical coordinates using variable densities in depth**, *Geophysical Journal International*
[Santiago Soler](#), [Agustina Pesce](#), Mario Giménez and [Leonardo Uieda](#)
doi: [10.1093/gji/ggz277](https://doi.org/10.1093/gji/ggz277)
- 2018 **Transient plate contraction between two simultaneous slab windows: Insights from Paleogene tectonics of the Patagonian Andes**, *Journal of Geodynamics*
Guido M. Gianni, [Agustina Pesce](#) and [Santiago Soler](#)
doi: [10.1016/j.jog.2018.07.008](https://doi.org/10.1016/j.jog.2018.07.008)
- 2017 **Analysis of the Illapel MW=8.3 thrust earthquake rupture zone using GOCE-derived gradients**, *Pure and Applied Geophysics*
Orlando Álvarez, [Agustina Pesce](#), Mario Giménez, Andrés Folguera, [Santiago Soler](#) and Wenjin Chen
doi: [10.1007/s00024-016-1376-y](https://doi.org/10.1007/s00024-016-1376-y)
- 2017 **Effective elastic thickness in the Central Andes. Correlation to orogenic deformation styles and lower crust high-gravity anomaly**, *Journal of South American Earth Sciences*
Héctor P.A. García, Guido M. Gianni, Marianela N. Lupari, Marcos A. Sánchez, [Santiago Soler](#), Francisco Ruiz and Federico G. Lince Klinger
doi: [10.1016/j.jsames.2017.11.021](https://doi.org/10.1016/j.jsames.2017.11.021)

Presentations

INVITED SPEAKER

- 2022 **Empowering science with open-source software**, *Instituto de Astronomia, Geofísica e Ciências Atmosféricas, Universidade de São Paulo*
[Santiago Soler](#)
- 2021 **Fatiando a Terra: Open-source tools for geophysics**, *Geophysical Society of Houston*
[Leonardo Uieda](#), [Santiago Soler](#) and [Agustina Pesce](#)

CONFERENCE PROCEEDINGS

- 2021 **Gradient-boosted equivalent sources for gridding large gravity and magnetic datasets**, *EGU21 General Assembly*
[Santiago Soler](#) and [Leonardo Uieda](#)
doi: [10.5194/egusphere-egu21-1276](https://doi.org/10.5194/egusphere-egu21-1276)
- 2020 **How to grid gravmag data with Harmonica**, *Transform 2020, Software Underground*
Lightning talk: <https://youtu.be/NtBDf7d7mwM?t=4245>
- 2020 **A better strategy for interpolating gravity and magnetic data**, *EGU2020, General Assembly*
[Santiago Soler](#) and [Leonardo Uieda](#)
doi: [10.6084/m9.figshare.12217973](https://doi.org/10.6084/m9.figshare.12217973)
- 2020 **Evaluating the accuracy of equivalent-source predictions using cross-validation**, *EGU2020, General Assembly*
[Santiago Soler](#) and [Leonardo Uieda](#)
doi: [10.5194/egusphere-egu2020-15729](https://doi.org/10.5194/egusphere-egu2020-15729)
- 2019 **Experiencias en el desarrollo de Fatiando a Terra**, *Taller Argentino de Computación Científica*
doi: [10.6084/m9.figshare.10013006](https://doi.org/10.6084/m9.figshare.10013006)
- 2019 **Gravitational fields of tesseroids with variable density**, *LAPIS 2019*
[Santiago Soler](#), [Agustina Pesce](#), Mario Giménez and [Leonardo Uieda](#)
doi: [10.6084/m9.figshare.8242439](https://doi.org/10.6084/m9.figshare.8242439)
- 2017 **Tesseroides con densidad variable: modelo directo con software libre**, *I Congreso Binacional de Investigación Científica y V Encuentro de Jóvenes Investigadores*
[Santiago Soler](#), [Agustina Pesce](#), [Leonardo Uieda](#) and Mario Giménez
- 2017 **Magnetic characterization of the Loncopué trough, Argentina**, *XX Congreso Geológico Argentino*
[Agustina Pesce](#), Mario Giménez, Andrés Folguera, Guido M. Gianni and [Santiago Soler](#)
- 2017 **Magnetic characterization of the Loncopué trough, Argentina**, *XX Congreso Geológico Argentino*
[Agustina Pesce](#), Mario Giménez, Andrés Folguera, Guido M. Gianni and [Santiago Soler](#)
- 2017 **Anomalías gravimétricas y magnéticas corticales del sur de la provincia volcánica de La Payenia, asociadas al tearing de la Placa de Nazca y anomalías mantélicas**, *XX Congreso Geológico Argentino*
Ana Astort, Bruno Colavitto, Lucía Sagripanti, Héctor P.A. García, [Santiago Soler](#), Francisco Ruiz and Andrés Folguera

- 2016 **Análisis flexural de la cuenca cretácico-paleógena del noroeste argentino. La subcuenca Lomas de Olmedo: zona de transición entre dos mecanismos de deformación distintos**, *Primer Simposio de Tectónica Sudamericana*
Héctor P.A. García, [Santiago Soler](#), Guido M. Gianni and Francisco Ruiz
- 2016 **Crustal Magmatic Anomalies from the Southern Payenia Volcanic Plateau, Associated with The Nazca Plate Tearing and Plume Head from Gravimetric and Magnetic Data**, *Primer Simposio de Tectónica Sudamericana*
Ana Astort, Francisco Ruiz, Héctor P.A. García, [Santiago Soler](#), Andrés Echaurren and Andrés Folguera

Open-source Software Development

Since 2015 **Fatiando a Terra: Open source tools for geophysics**
Developer and maintainer
<https://www.fatiando.org>

Reviewer

[Journal of Open Research Software](#)

[Journal of Applied Geophysics](#)

[Journal of Open-Source Software](#)

Technical Skills

Programming Python, Numba, Cython, bash, FORTRAN, C

Markup Markdown, LaTeX, HTML, RST

WebDev CSS, Bootstrap, Normalize, Static Site Generators (jekyll, urubu)

DevOps GNU/Linux, Unix terminal, VIM, Neovim, git, GNU Make, SSH

Graphic Design Inkscape, GIMP, imagemagick, Darktable

Other tools Jupyter Notebooks, LibreOffice Suite, PGP, GitHub Actions, Nextcloud, maxima

Languages

Spanish Native

English Advanced

Italian Beginner