

Santiago Soler

CONICET, Argentina

Instituto Geofísico Sismológico Volponi, UNSJ, Argentina

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Education

Since 2017 **PhD Student in Geophysics**, *Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan*, San Juan, Argentina.

Advisor: Mario Giménez, Co-advisor: [Leonardo Uieda](#)

2009–2015 **Licentiate in Physics**, *Facultad de Ciencias Exactas, Ingeniería y Agrimensura, Universidad Nacional de Rosario*, Rosario, Santa Fe, Argentina.

Thesis: Spectral methods for the determination of the Curie Depth Point and Elastic Thickness of Earth's Crust

Advisor: Mario Giménez

<https://github.com/santisoler/tesina-fisica>

Awards and Scholarships

2017–2022 CONICET PhD Scholarship

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

Teaching

2021 **Certified Carpentries Instructor**, *The Carpentries*.

2021 **Tutorial: Processing gravity and magnetic data with Harmonica**, *Transform21, Software Underground*.

[Santiago Soler](#), [Andrea Balza Morales](#) and [Agustina Pesce](#)

<https://youtu.be/0bxZcCAr6bw>

2020 **Introducción a Python para Científicxs**, *Universidad Nacional de San Juan*, San Juan, Argentina.

https://youtu.be/LS_e9gqTM2s

2020 **Tutorial: From scattered data to gridded products using Verde**, *Transform 2020, Software Underground*.

[Leonardo Uieda](#) and [Santiago Soler](#)

<https://youtu.be/-xZdNdvzm3E>

- 2017–2019 **Physics I and Statistical Mechanics**, *Departamento de Geofísica y Astronomía, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan*, San Juan, Argentina.
Jefe de Trabajos Prácticos (assistant professor of practice)
<https://www.santisoler.com/mecanica-estadistica>
- 2013–2015 **Introduction to Science and Physics I**, *Departamento de Física, Escuela de Ciencias Exactas y Naturales, Facultad de Ciencias Exactas, Ingeniería y Agrimensura, Universidad Nacional de Rosario*, Rosario, Santa Fe, Argentina.
Ayudante de Segunda (undergraduate assistant teacher)

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 Klingler
doi: [10.1016/j.jsames.2017.11.021](https://doi.org/10.1016/j.jsames.2017.11.021)

Conference proceedings and presentations

- 2021 **Fatiando a Terra: Open-source tools for geophysics**, *Geophysical Society of Houston*.
Leonardo Uieda, Santiago Soler and Agustina Pesce
- 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*, San Luis, Argentina.
doi: [10.6084/m9.figshare.10013006](https://doi.org/10.6084/m9.figshare.10013006)
- 2019 **Gravitational fields of tesseroids with variable density**, *LAPIS 2019*, La Plata, Buenos Aires, Argentina.
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*, San Juan, Argentina.
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

Since 2015 **Fatiando a Terra: Open source tools for geophysics.**

Developer and maintainer

<https://www.fatiando.org>

Reviewer

o [Journal of Open Research Software](#)

o [Journal of Applied Geophysics](#)

o [Journal of Open-Source Software](#)

Technical Skills

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

Markup Markdown, LaTeX, HTML, CSS, Bootstrap

Tools GNU/Linux, Unix Terminal, bash, zsh, Neovim, git, GitHub, Jupyter Notebooks, GNU Make, Inkscape, GIMP, GMT, maxima

Languages

Spanish Native

English Advanced

Italian Beginner