

Agustina Pesce

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Personal Information

Full name: Agustina Pesce

Pronouns: She/her

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ORCID: [0000-0002-5538-8845](#)

Education

2014 - 2019 **PhD in Geophysics**, [FCEFyN](#), *Universidad Nacional de San Juan, Argentina*

2005 - 2014 **Licentiate in Physics**, [FCEIA](#), *Universidad Nacional de Rosario*

Appointments

Since Nov. 2021 **Coding Coordinator and Trainer** in Code to Communicate Program ([CoCo](#))

Since 2019 **Assistant Professor of practice**, Geology Department, [FCEFyN](#), *Universidad Nacional de San Juan, Argentina*

2019 - March 2022 **Postdoctoral Researcher**, [IGSV](#), *Influence of a mantle plume in subduction zones by geodynamics numerical models*
Advisor: Dr. Victor Sacek ([IAG-USP](#))

Awards and Scholarships

2019 - 2022 [CONICET](#) Postdoctoral Scholarship

2014 - 2019 [CONICET](#) PhD Scholarship

2015 Travel grants: SEG/ExxonMobil Student Education Program (SEP), New Orleans, EE.UU.

Certifications

2021 Certified Software Carpentry Instructor

Open-source Software

Software Engineer and Data Scientist Experience

2020 **Dashboards**

A COVID-19 data visualization

- Design and development of the libraries
- Automated deployment of the website through GitHub Actions

Since 2019 **MANDYOC**

Open source tool to simulate the mantle dynamics

- Automated deployment of the documentation website through GitHub Actions
- Community building (license, code of conduct, how to contribute guidelines, Readme)
- Wrote a Makefile for building and installing

Since 2019

tapIOca

Tools for transforming output files from Mandyoc code to dataset

- Design and development of the library and its API

Since 2016

Fatiando a Terra

Open source tools for geophysics

- Implementation of new methodologies with unit tests and documentation
- Improvement of the main website project
- Maintenance tasks (CI fixes, automation of tasks)
- Active participation on Developers and Community meetings

Web design and Development

Diana Acero

Personal website.

Geolatinas coding group

A website to show what the coding group is and their activities.

Dashboard

A COVID-19 data visualization from Argentina.

Dashboard

Dashboard for Argentina COVID-19 data using *plotly* and *dash*.

Garabatos

A site for my paintings.

CromoGráfica

Business website currently under development.

Teaching

Undergraduate Courses

Since 2019

Physics I, Departamento de Geología, FCEFyN, Universidad Nacional de San Juan

Since 2019

Physics II, Departamento de Geología, FCEFyN, Universidad Nacional de San Juan

Workshops and Tutorials

2022

Mandyoc: A finite element code to simulate thermochemical convection in parallel for *Transform 2022*

https://www.youtube.com/watch?v=wzrIF4zpshM&feature=emb_title

2022

Introduction to Python for *CoCo Program*

<https://github.com/CodeToCommunicate/CoCoLessons>

2021

Introduction to Git and GitHub, *GeoLatinas*

<https://github.com/GeoLatinas/intro-to-git-2021>

2021

Tutorial: Processing gravity data with Harmonica, *Transform 2020*,

Software Underground

<https://github.com/fatiando/transform21>

- 2020 **How to manage multi-dimensional arrays?**, *Online seminar of the laboratorio de tectonofísica from IAG-USP*
https://github.com/aguspesce/online_seminar_IAG-USP
- 2017 **Introductory course to LaTeX: How to produce high quality documents**, *Secretaría de Extensión, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan, Argentina*
<https://santisoler.github.io/teaching/latex.html>

Publications

Peer-reviewed papers

- 2022 **Mandyoc: A finite element code to simulate thermochemical convection in parallel**, *Journal of Open-Source Software*, 7(71), 4070
Sacek, V; Assunção, J; Pesce, A; Monteiro da Silva, R
<https://joss.theoj.org/papers/10.21105/joss.04070.pdf>
- 2021 **Sección eléctrica cortical a través de la fosa de Loncopué**, *Revista de la Asociación Geológica Argentina* 78 (2), 333-337
Pesce, A; Giménez, M; Bibiana, C; Gianni, G; Folguera, A
<https://revista.geologica.org.ar/raga/article/view/246>
- 2020 **Oligocene to present shallow subduction beneath the southern Puna plateau**, *Tectonophysics*
Gianni, G. M; García, H; Pesce, A; Lupari, M; González, M; Giambiagi, L.
doi: [10.1016/j.tecto.2020.228402](https://doi.org/10.1016/j.tecto.2020.228402)
- 2019 **The subduction of the Copiapó aseismic ridge, is the causing of the formation of metallic minerals deposits in north of Chile and Argentina?**, *Geodesy and Geodynamics*
Gimenez, M; Acosta, G; Alvarez, O; Pesce, A; Lince Kinger, F; Folguera A.
doi: [10.1016/j.geog.2019.04.007](https://doi.org/10.1016/j.geog.2019.04.007)
- 2019 **Gravitational field calculation in spherical coordinates using variable densities in depth**, *Geophysical Journal International*
Soler, S; Pesce, A; Gimenez, M; Uieda, L.
doi: [10.1093/gji/ggz277](https://doi.org/10.1093/gji/ggz277)
- 2019 **Magnetic characterization of a retroarc extensional basin: The Loncopué Trough**, *Journal of South American Earth Sciences*
Pesce, A; Gianni, G; Giménez, M. E; Folguera, A
doi: [10.1016/j.jsames.2018.11.00](https://doi.org/10.1016/j.jsames.2018.11.00)
- 2019 **Modelo preliminar 3-D de susceptibilidad magnética del volcán Tromen**, *Revista de la Asociación Geológica Argentina*, 76(1), 687-692.
Pesce, A; Lupari, M; Gianni, G; Nacif, S; Gimenez, M
<https://revista.geologica.org.ar/raga/article/view/129>
- 2018 **Modelado gravimétrico 3D de la Corteza Superior de la subcuenca Palauco y alrededores, sur de Mendoza, Argentina**, *Revista de la Asociación Geológica Argentina*, 75(4), 584-591.

Lupari, M; Pesce, A; Leiva, F; Gonzales, M. A; Nacif, S; Alvarez, O; Gimenez, M; Lavecchia, J; Folguera, A

<https://ppct.caicyt.gov.ar/index.php/raga/article/view/13112>

- 2018 **Transient plate contraction between two simultaneous slab windows: Insights from Paleogene tectonics of the Patagonian Andes**, *Journal of Geodynamic*
Gianni, G; Pesce, A; Soler, S. R
doi: [10.1016/j.jog.2018.07.008](https://doi.org/10.1016/j.jog.2018.07.008)
- 2018 **Intraplate seismicity recorded by a local network in the Neuquen Basin Argentina**. *Journal of South American Earth Sciences*
Correa-Otto, S; Nacif, S; Pesce, A; Nacif, A; Gianni, G; Furlani, R; Giménez, M; Ruiz, F
doi: [10.1016/j.jsames.2017.12.007](https://doi.org/10.1016/j.jsames.2017.12.007)
- 2018 **3-D crustal-scale gravity model of the San Rafael Block and Payenia volcanic province in Mendoza, Argentina**, *Geoscience Frontiers*
Richarte, D; Lupari, M; Pesce, A; Nacif, S; Gimenez, M
doi: [10.1016/j.gsf.2017.03.004](https://doi.org/10.1016/j.gsf.2017.03.004)
- 2017 **Plume overriding triggers shallow subduction and orogeny in the Southern Central Andes**, *Gondwana Research*
Gianni, G; García, H; Lupari, M; Pesce, A; Folguera, A
doi: [10.1016/j.gr.2017.06.011](https://doi.org/10.1016/j.gr.2017.06.011)
- 2017 **Analysis of the Illapel Mw=8.3 thrust earthquake rupture zone using GOCE derived gradients**, *Pure and Applied Geophysics*
Álvarez, O; Pesce, A; Gimenez, M; Folguera, A; Soler, S; Wenjin Chen
doi: [10.1007/s00024-016-1376-y](https://doi.org/10.1007/s00024-016-1376-y)

Books Chapters

- 2020 **Pliocene to Quaternary Retroarc Extension in the Neuquén Basin: Geophysical Characterization of the Loncopué Trough**, *Opening and closure of the Neuquén Basin in the Southern Andes*, Springer
Pesce, A; Gianni, G; Giménez, M. E; Folguera, A
doi: [10.1007/978-3-030-29680-3](https://doi.org/10.1007/978-3-030-29680-3)
- 2020 **Plume Subduction Beneath the Neuquén Basin and the Last Mountain Building Stage of the Southern Central Andes**, *Opening and Closure of the Neuquén Basin in the Southern Andes*, Springer
Gianni, G; Pesce, A; García, H. P. A; Lupari, M; Correa-Otto, S; Nacif, S; Folguera, A
doi: [10.1007/978-3-030-29680-3](https://doi.org/10.1007/978-3-030-29680-3)
- 2019 **Along-strike segmentation of the Farallon-Phoenix midocean ridge: Insights from the Paleogene tectonic evolution of the Patagonian Andes between 45° and 46° S**, *Andean Tectonics*, Elsevier
Gianni, G; Pesce, A; García, H.P.A; Sánchez, M; Soler, S; Navarrete, C; Echaurren, A; Encinas, A; Folguera, A
doi: [10.1016/B978-0-12-816009-1.00023-X](https://doi.org/10.1016/B978-0-12-816009-1.00023-X)
- 2019 **Crustal structure in the southern Andes adjacent foreland and Atlantic passive margin delineated by satellite gravimetric models**, *Andean Tectonics*, Elsevier

Gimenez, M; Pesce, A; Pechuan, S; Areco, M. A; Soler, S. R; Correa Otto, S; Lince Klinger, F; Alvarez, O; Folguera, A

doi: [10.1016/B978-0-12-816009-1.00002-2](https://doi.org/10.1016/B978-0-12-816009-1.00002-2)

Conference proceedings and Talks

- 2021 **Fatiando a Terra: Open-source tools for geophysics**, *Online talk given to the Geophysical Society of Houston (GSH)*
Uieda, L; Soler, S. R. and Pesce, A
<https://github.com/fatiando/2021-gsh>
- 2021 **Harmonica and Boule: Modern Python tools for geophysical gravimetry**, *EGU2021 General Assembly*
Uieda, L; Soler, S. R; Pesce, A; Perozzi, L and Wieczorek, M. A
doi: [10.5194/egusphere-egu21-8291](https://doi.org/10.5194/egusphere-egu21-8291)
- 2020 **Evaluation of the presence of a weak layer in the numerical simulation of lithospheric subduction**, *EGU2020 General Assembly*
Agustina Pesce and Victor Sacek
doi: [10.5194/egusphere-egu2020-734](https://doi.org/10.5194/egusphere-egu2020-734)
- 2018 **Análisis Isostático de los Andes Centrales Sur a Partir de la Ondulación del Geoide**, *XVII Reunión de Tectónica, La Rioja, Argentina*
Pesce, A. and Gimenez, M.
ISBN: 978-987-42-9619-1
- 2017 **Magnetic characterization of the Loncopué trough, Neuquén, Argentina**, *XX Congreso Geológico Argentino*
Pesce, A; Gimenez, M; Folguera, A; Gianni, G; Soler, S. R.
ISBN: 978-987-42-6666-8
- 2017 **Caracterización magnética de la fosa de Loncopué, Neuquén, Argentina**, *I Congreso Binacional de Investigación Científica (Argentina-Chile) y Encuentro de Jovenes Investigadores, San Juan, Argentina*
Agustina Pesce
- 2016 **Estudio magnético, gravimétrico y magnetotelúrico de la fosa de Loncopué**, *Primer Simposio de Tectónica Sudamericana, Santiago de Chile, Chile*
Pesce, A; Gimenez, M; Folguera, A
- 2015 **Análisis geodésico y gravimétrico preliminares la franja de 38º a 40º S de la cordillera de los Andes**, *XVI Reunión de Tectónica, Río Negro, Argentina*
Pesce, A; Gimenez, M; Introcaso, A; Guspí, F
ISBN: 978-987-3667-17-6
- 2014 **Combinación de alturas del geoide y anomalías de aire libre para gran cantidad de observaciones**, *XXVII Reunión científica de la Asociación Argentina de Geofísicos y Geodestas, San Juan, Argentina*
Guspí, F; Pesce, A
ISBN: 978-987-33-5605-6
- 2014 **Distensión-compresión en los Andes del norte Argentino. Su explicación a partir de un modelo plástico actualizado**, *XXVII Reunión científica de la Asociación Argentina de Geofísicos y Geodestas, San Juan,*

Argentina

Pesce, A; Novara, I; Introcaso, A

ISBN: 978-987-33-5605-6

2014

Análisis isostático preliminar de la región norte de la Patagonia, a partir de las ondulaciones del geoide, XXVII Reunión científica de la Asociación Argentina de Geofísicos y Geodestas, San Juan, Argentina

Pesce, A; Gimenez, M; Guspí, F

ISBN: 978-987-33-5605-6

Technical Skills

Programming	Python, Numba, bash, FORTRAN, C
Markup	Markdown, LaTeX, HTML
WebDev	CSS, Bootstrap, Milligram, Normalize
DevOps	GNU/Linux, Unix terminal, VIM, Neovim, VS Code, git, GNU Make, SSH
Graphic Design	Inkscape, GIMP, Krita
Other tools	Libre Office suite, JupyterLab, Jupyter Notebooks, GitHub
Geophysics tools	Oasis Montaj, GMT, "Fateando a Terra"

Languages

Spanish	Native
English	Intermediate

Communities

Since 2021	Las de Sistema
Since 2020	Geolatinas
Since 2020	Software Underground

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