

# Agustina Pesce

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## Personal Information

**Pronouns:** She/her

**Birth date:** January 2, 1986, Argentina

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## Education

2014 - 2019      **PhD in Geophysics**, *FCEFyN*, Universidad Nacional de San Juan, Argentina  
*Thesis:* Geophysical analysis of the Loncopué Trough, Neuquén  
*Advisor:* Dr. Mario Gimenez (*IGSV*)  
*Co-Advisor:* Andres Folguera (*IDEAN*)

2005 - 2014      **Licentiate in Physics**, *FCEIA*, Universidad Nacional de Rosario

## Awards and Scholarships

2019 - 2021      *CONICET* Postdoctoral Scholarship

2014 - 2019      *CONICET* PhD Scholarship

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

## Research experience

2019 - 2021      **Postdoctoral project**, *Influence of a mantle plume in subduction zones by geodynamics numerical models*  
*Advisor:* Dr. Victor Sacek (*IAG-USP*)  
*Co-Advisor:* Dr. Mario Gimenez (*IGSV*)

Since 2019      **Mandyoc:** Mantle dynamics simulator code and **tapIOca:** Tools for transforming output files from Mandyoc code to dataset.

[Mandyoca](#)

[Tapioca](#)

- Since 2016      **Fatiando a Terra:** Open source tools for geophysics  
<https://www.fatiando.org/>  
Member and contributor.
- Since 2014      **Researcher at IGSV**, FCEFyN, Universidad Nacional de San Juan, Argentina

## Teaching

- 2021      **Tutorial: Processing gravity data with Harmonica**, *Transform 2020, Software Underground*  
<https://github.com/fatiando/transform21>  
Instructor
- Since 2019      **Physics I and Physics II**, *Departamento de Geología, FCEFyN, Universidad Nacional de San Juan*  
Jefe de Trabajos Prácticos (assistant professor of practice).
- 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*  
<https://santisoler.github.io/teaching/latex.html>

## Publications

### Peer-reviewed papers

- 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 gravimetrico 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, Garcia, 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

2021 **Fatiando a Terra: Open-source tools for geophysics, *Online talk given to the Geophysical Society of Houston (GSH)***

Uieda, Leonardo; Soler, Santiago R. and Pesce, Agustina

<https://github.com/fatiando/2021-gsh>

2021 **Harmonica and Boule: Modern Python tools for geophysical gravimetry, *EGU2021 General Assembly***

Uieda, Leonardo; Soler, Santiago R.; Pesce, Agustina; Perozzi, Lorenzo and Wieczorek, Mark 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 V 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; Pesca, 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, bash, FORTRAN, C
Markup	Markdown, LaTeX, HTML
Style sheets and framework	CSS, Bootstrap, Milligram
Tools	GNU/Linux, git, bash tools, VS Code, Libre Office suite, Inkscape, GIMP, Krita, JupyterLab
Geophysics tools	Oasis Montaj, GMT, "Fateando a Terra"

## Languages

Spanish	Native
English	Intermediate

## Communities

Since 2020	<a href="#">Geolatinas</a>
Since 2020	<a href="#">Software Underground</a>

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