

Fecha del CVA	16/01/2025
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Parte A. DATOS PERSONALES

Nombre	Anahí Luciana		
Apellidos	Bonatto Caldiz		
Sexo	No Contesta	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email			
Open Researcher and Contributor ID (ORCID)	0000-0001-7595-3648		

A.1. Situación profesional actual

Puesto	Postdoc		
Fecha inicio	2024		
Organismo / Institución	Istituto Nazionale di Geofisica e Vulcanologia		
Departamento / Centro	UF3 - Sismologia - Effetti di Sito - Pericolosità sismica. / INGV Roma		
País	Italia	Teléfono	(+39) 06518601 - -
Palabras clave	Sismología; Geofísica		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2023 - 2023	Visit guide / Magma Cultura / España
2020 - 2022	Adjunct Assistant Professor / Universidad de La Serena / Chile
2017 - 2018	Content developer / University of Cambridge / Reino Unido
2016 - 2017	ICTP-TRIL Postdoctoral Fellow / Istituto Nazionale di Geofisica e Vulcanologia / Italia
2015 - 2015	Maternity leave (7 months)
2008 - 2012	PhD fellow (JaePredoc 2007) / Consejo Superior de Investigaciones Científicas / España
2008 - 2008	Maternity leave (4 months)
2004 - 2007	Teaching Assistant / Universidad Nacional de la Plata / Argentina

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Doctor en Ciencias de la Tierra	Universidad de Granada / España	2013
Master Universitario en Geofísica y Meteorología	Universidad de Granada / España	2010
Geofísico	Universidad Nacional de la Plata / Argentina	2007

Parte B. RESUMEN DEL CV

EDUCATION AND POSITIONS

I graduated in 2007 with a degree in Geophysics from the Universidad Nacional de La Plata (UNLP). In 2008, I was awarded a Jae-Predoc scholarship by CSIC to pursue postgraduate studies. After my first maternity leave, I completed an MSc in Geophysics and Meteorology in 2010 and a PhD in Earth Sciences in 2013 at the Universidad de Granada, earning a Special Mention for my MSc thesis at the García-Siñeriz Prize in 2011. Following my second maternity leave, I was awarded a TRIL fellowship to work at Istituto Nazionale di Geofisica e Vulcanologia (INGV-Italy). In 2017, I joined the Isaac Physics project at the University of Cambridge, focusing on outreach activities. From 2020 to 2023, I served as Adjunct Assistant Professor at the

University of La Serena (ULS), teaching (8 to 10 h a week), mentoring undergraduates and conducting research through the ULS PIA program. In 2023, I briefly worked for Magma Cultura in STEAM outreach activities. Since 2024, I have been a postdoctoral researcher at INGV, focusing on seismic studies.

SKILLS AND RESEARCH

My expertise includes weak signal detection through receiver functions (RFs), cross-correlation or stacking. As well as coding (Python, Bash, AWK, Fortran), deploying seismic networks, and analyzing large datasets in diverse tectonic settings. I have led research in major international projects like TOPOIBERIA, SIGHT, FONDECYT Regular 1202007, AdriaArray, and AdriaLab. I have published 7 articles (4 as first-author), 5 conference papers (2 as first author) and a dataset, reflecting my ability to lead international collaborations.

My research focuses on the mantle transition zone (MTZ), particularly the 410 km and 660 km boundaries, as indicators of thermo-chemical variations. During my PhD, I developed custom codes to create the first topography maps of these discontinuities in the Ibero-Maghrebian region. I have expanded my research to subduction zones (Western Mediterranean, Chile-Argentina), volcanic hotspots, and stable regions. Under the SIGHT project with Dr Silveira, I conducted the first comprehensive RFs analysis of mantle plumes beneath the Canary and Madeira archipelagos, revealing differences in their magmatic processes. Collaborating with Dr Piromallo and Dr Cottaar, I investigated MTZ structures beneath the Chile-Argentina flat subduction zone, revealing significant compositional variations. As part of AlpArray, I contributed to a receiver function dataset and a high-resolution Moho map for the Alps. Currently, I investigate slab-mantle interactions in the Apennines with AdriaLab and AdriaArray.

Under the FONDECYT Regular 1202007 project with Dr R Amorín (IAA-CSIC) as PI, I developed a Python-based algorithm to identify over 20,000 galaxies with extreme emission-line properties with data from the Dark Energy Spectroscopic Instrument (DESI), showcasing the versatility of my signal processing skills. This work allowed us to conduct a detailed statistical analysis of the physical and chemical properties of the sample. A manuscript is currently in preparation (Amorín, Bonatto et al., Astronomy & Astrophysics, in prep.)

OUTREACH

I have presented my research at 23 major conferences, given seminars in Spain, Italy, Argentina, Chile and Portugal, and participated in academic interviews. I contributed to the World Pendulum Alliance by installing a remotely controlled pendulum system at ULS, presented at the XXIII Simposio Chileno de Física.

OTHER CONTRIBUTIONS

I have contributed as a reviewer for high-impact journals, including Frontiers and Physics of the Earth and Planetary Interiors. I supervised a BSc theses at UNLP in 2015 (P. Bagdo's) and co-supervised a summer internship at the University of Cambridge in 2017 (S. Knowless). In 2022, served on an evaluation committee for a UNLP BSc thesis (M. Z. Ruiz Moreno). As an Adjunct Assistant Professor at ULS, I taught "General Physics" (60 students) and "Vibrations and Waves" (15-25 students), both 8 hours per week, and mentored top-performing undergraduates (2 in 2021, 5 in 2022).

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con "peer review" y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

- 1 **Artículo científico.** (1/7) Luciana Bonatto (AC); David Schlaphorst; Graça Silveira; João Mata; Chiara Civiero; Claudia Piromallo; Martin Schimmel. 2024. Unveiling the distinct structure of the upper mantle beneath the Canary and Madeira hotspots, as depicted by the 660, 410 and X discontinuities. *Journal of Geophysical Research: Solid Earth*. Wiley. 129-e2023JB028195.
- 2 **Artículo científico.** Michailos Konstantinos; György Hetényi; Matteo Scarponi; et al; Wojciech Czuba; (6/26) Luciana Bonatto. 2023. Moho depths beneath the European Alps: a homogeneously processed map and receiver functions database. *Earth System Science Data*. Copernicus Publications. 15-5.
- 3 **Artículo científico.** (1/3) Luciana Bonatto (AC); Claudia Piromallo; Sanne Cottaar. 2020. The Transition Zone Beneath West Argentina-Central Chile Using P-to-S Converted Waves. *Journal of Geophysical Research: Solid Earth*. AGU Journals. 125-e2020JB019446.
- 4 **Artículo científico.** Aladino Govoni; Ezio D'Alema; (3/22) Luciana Bonatto; et al; Marco Santulin. 2017. AlpArray-Italy: Site description and noise characterization. *Advances in Geosciences*. Copernicus Publisher. 43.
- 5 **Artículo científico.** (1/4) Luciana Bonatto (AC); Martin Schimmel; Josep Gallart; José Morales. 2015. The upper-mantle transition zone beneath the Ibero-Maghrebian region as seen by teleseismic Pds phases. *Tectonophysics*. Elsevier. 663, pp.212-224.
- 6 **Artículo científico.** (1/4) Luciana Bonatto (AC); Martin Schimmel; Josep Gallart; José Morales. 2013. Studying the 410-km and 660-km discontinuities beneath Spain and Morocco through detection of P-to-s conversions. *Geophysical Journal International*. Oxford University Press. 194-2, pp.920-935.
- 7 **Set de datos.** Michailos Konstantinos; György Hetényi; Matteo Scarponi; et al; Wojciech Czuba; (6/26) Luciana Bonatto. 2023. European Alps Receiver Function Database. Zenodo.
- 8 **Resumen extendido.** L. Bonatto; D. Schlaphorst; G. Silveira; J. Mata; C. Civiero; C. Piromallo; M. Schimmel. 2024. Caracterización de las Plumas de Canarias y Madeira: Observaciones con Funciones Receptoras. *Geo-Temas*. Sociedad Geológica de España.. 20, pp.569-571.
- 9 **Resumen extendido.** J. Diaz; Antonio Villaseñor; Flor de Lis Mancilla; Imma Palomeras; (5/8) Luciana Bonatto; Martin Schimmel; M. Harnafi; Josep Gallart Muset. 2016. Estructura y dinámica del manto bajo la Península Ibérica: La contribución del proyecto Topo-Iberia. *Geo-Temas*. Sociedad Geológica de España. 16. ISSN 1576-5172.
- 10 **Resumen extendido.** (1/4) L. Bonatto; M. Schimmel; J. Gallart; J. Morales. 2012. Detection of Reflected and Converted Seismic Phases at the Upper Mantle Discontinuities beneath Iberia and Morocco to Map the Transition Zone Thickness. *Geo-Temas*. Sociedad Geológica de España. 13. ISSN 1576-5172.

C.2. Congresos

- 1 R. Amorín; L. Bonatto. Extreme emission-line galaxies: Synergies between J-PAS and DESI. 20th J-PAS Collaboration Workshop. Centro de Estudios de Física de Cosmos de Aragón (CEFCA). 2024. España.
- 2 P Häberle; L. Bonatto; et al.. World Pendulum Alliance: Una iniciativa en docencia y diseminación científica. XXIII Simposio Chileno de Física (SOCHIFI 2022). Sociedad Chilena de Física. 2022. Participativo - Ponencia oral (comunicación oral). Congreso.
- 3 L. Bonatto; D. Schlaphorst; G. Silveira; J. Mata; C. Civiero; C. Piromallo; M. Schimmel. Unveiling the heterogeneous structure of the upper-mantle beneath the Canary and Madeira volcanic provinces. European Geosciences Union General Assembly 2022. European Geosciences Union. 2022. Austria. Participativo - Ponencia oral (comunicación oral). Congreso.
- 4 L. Bonatto; K. Valenzuela; M. Jaque Arancibia. Valoración de actitudes y creencias científicas en estudiantes novatos de Física General para Odontología en modalidad remota. 106° Reunión de la Asociación de Física de Argentina (106° RAFA). Asociación de Física de Argentina. 2021. Argentina. Participativo - Ponencia oral (comunicación oral). Congreso.

- 5 L. Bonatto; C. Piromallo; G. Badi. Evidences of a sharp 410 and a broad 660 from P-to-s conversions in West Argentina-central Chile. Big transition zone: below and beyond. University College London. 2017. Reino Unido. Participativo - Póster. Congreso.
- 6 L. Bonatto; C. Piromallo; G. Badi. The transition zone below the Chile-Argentina flat subduction region. European Geophysical Union General Assembly 2017. European Geophysical Union. 2017. Austria. Participativo - Póster. Congreso.
- 7 P. Bagdo; L. Bonatto; G. Badi. La zona de transición del manto superior en la región de subducción plana de Nuevo Cuyo a partir de la detección de fases convertidas de P a s. XXVIII Reunión Científica de la Asociación Argentina de Geofísicos y Geodestas (AAGG 2017). Asociación Argentina de Geofísicos y Geodestas. 2017. Argentina. Participativo - Otros. Congreso.
- 8 L. Bonatto; M. Schimmel; J. Gallart; J. Morales. The upper-mantle transition zone beneath the Ibero-Maghrebian region as seen by teleseismic Pds phases. European Geosciences Union General Assembly 2016. European Geosciences Union. 2016. Austria. Participativo - Ponencia oral (comunicación oral). Congreso.
- 9 L. Bonatto; M. Schimmel; J. Gallart; J. Morales. Using cross-correlation to map the Transition Zone thickness beneath the Iberian Peninsula and Morocco. AGU FALL MEETING. American Geophysical Union. 2012. Estados Unidos de América. Participativo - Póster. Congreso.
- 10 L. Bonatto; M. Schimmel; J. Gallart; J. Morales. Using Cross-Correlation to Detect Upper Mantle Phases Beneath Spain and Morocco. Congrès des Doctorants (IPGP-PARIS). Institut de Physique du Globe de Paris. 2012. Francia. Participativo - Ponencia invitada/ Keynote. Congreso.

C.3. Proyectos o líneas de investigación

- 1 **Proyecto.** On the dynamics of the Adria plate: a natural laboratory for multiple subduction systems (AdriaLab). C. Faccenna. (UNIRM3; Università di Catania, INGV). 01/10/2022-30/09/2025. 235.438 €. Miembro de equipo.
- 2 **Proyecto.** FONDECYT REGULAR 1202007. Fondo Nacional de Desarrollo Científico y Tecnológico. R. Amorín. (Universidad de La Serena). 01/01/2020-31/12/2023. 200.000 €. Colaborador externo.
- 3 **Proyecto.** SIGHT: Selsmic and Geochemical constraints on the Madeira HoTspot systems. Fundação para a Ciência e a Tecnologia. G. Silveira. (Instituto Politécnico de Lisboa Instituto Superior de Engenharia de Lisboa). 01/10/2018-30/09/2022. 238.702,69 €. Miembro de equipo.
- 4 **Proyecto.** 11/G129, Geodinámica en Placa Sudamericana y de Scotia. Universidad Nacional de La Plata. Nora Cristina Sabbione. (Universidad Nacional de La Plata). 01/01/2014-31/12/2017. 7.124 €. Colaborador externo.
- 5 **Proyecto.** CSD2006-00041, TOPO-IBERIA: Geociencias en Iberia: Estudios integrados de topografía y evolución 4-D. Ministerio de Educación y Ciencia. Gallart Muset, Josep. (10 different Spanish institutions: <http://www.igme.es/Topolberia/participantes.html>). 06/10/2006-15/09/2013. 6.000.000 €. Miembro de equipo.
- 6 **Proyecto.** AdriaArray multinational initiative. (ETH Zurich, INGV, GFZ Postdam, IPGP-Paris and several more (see web)). Desde 19/05/2022. Miembro de equipo.
- 7 **Proyecto.** AlpArray multinational initiative. Multiple EU public entities (Research Institutes, Universities, etc). Edi Kissling. (ETH Zurich, INGV, GFZ Postdam, IPGP-Paris and several more (see web)). Desde 01/07/2015. Miembro de equipo.