Personal information

Name / Surname	**Quinteros, Javier**
Address	Albert-Einstein-Straße 42-46, 14473 Potsdam, Germany
Personal Email	javier (at) quinteros.eu
Nationality	German, Argentine

Professional experience and background

2013–present	GFZ German Research Centre for Geosciences - Seismology - GEOFON
Position	GEOFON Data Centre Manager
2019–present	International Federation of Seismological Networks (FDSN)
Position	Member of the Executive Committee and Chair of Working Group II - Data Formats and Data Centres
2017–2019	European Integrated Data Archive (EIDA)
Position	Chair of Technical Committee (ETC)
2008–2013	**Postdoctoral position** - GFZ German Research Centre for Geosciences - Geodynamic Modeling
Research on	Numerical models applied to geodynamics.
Group Leader	Prof. Dr. Stephan V. Sobolev
Description	Development and use of thermo-mechanical models based on Navier-Stokes equations for the study of Geodynamics. The main focus was on processes related with lithosperic deformation or deep subduction. However, some studies have also been made in the scale of millimetric deformation.
2008	**Postdoctoral position in Computer Sciences** - University of Buenos Aires
Research on	Finite element method applied to geodynamics.
Supervisors	Prof. Dr. Pablo Jacovkis and Prof. Dr. Víctor Ramos.
Description	Development of numerical models for the simulation of geophysical processes. A strong point of the research plan was the study of the scalability of different numerical approaches.
2008	**PhD in Computer Sciences** - University of Buenos Aires
Supervisors	Prof. Dr. Pablo Jacovkis and Prof. Dr. Víctor Ramos.
Description	Implementation of numerical models for the simulation of the interaction of an orogen formation and changing climate conditions through million years.
2003	**Licenciado in Computer Sciences (Masters)** - University of Buenos Aires

Teaching experience

2016 — **Lecturer** - Helmholtz Virtual Institute Dead Sea Research Venue
DESERVE Winter School

2016 — **Lecturer** - International Centre for Theoretical Physics
School on Seismology beyond Textbooks

2015 — **Invited Professor** - University of Buenos Aires (FCEN)
Introduction to thermo-mechanical modelling for geodynamics

2015 — **Lecturer** - Badan Meteorologi, Klimatologi, dan Geofisika (BMKG)
Waveform Archive Access and Administration

2015 — **Lecturer** - Geo.X Second SULU Workshop
SeisComP3 for data handling and analysis

1996–2008 — **Teaching Assistant** - University of Buenos Aires (FCEN)
New Techniques in Data Compression (2000–2008)
Data Systems (1999–2000)
Computer Architecture II (1996–1998)

Personal skills and competences

Scientific Data Management — Data Management Plans, Data and Software Licenses, iRODS, Persistant Identifiers,Cloud solutions, Automatic Workflows, AAI solutions.

Programming Languages — Python, C, C++, MPI, Matlab, Octave, UNIX shell scripting, SQL and others.

Others

2020 — **Chair of Session in ESC-2020** - S03-Challenges due to massive generation of seismic data. Large-N experiments, fiber optic cables, and how users, data centres and applications will cope with data in the near future.

2018 — **Chair of Session in ESC-2018** - S03-From site selection to data publication in data Life Cycle in Seismology.

2015–2020 — **PhD Supervision** - Matías Barrionuevo. *Modelado numérico de la orogenia relacionada a subducción en los Andes Centrales del Sur (30-36°S). Análisis del papel de las características de la placa superior.* PhD thesis, University of Buenos Aires, Buenos Aires, Argentina, 2020.

2008–2009 — **Master Thesis Supervision** - Gabriel H. Bursztyn. Una nueva implementación para las ecuaciones de Navier-Stokes mediante KLE y elementos espectrales. Master's thesis, University of Buenos Aires, Buenos Aires, Argentina, Oct 2009.

Experience as Reviewer — Seismological Research Letters.
Computers and Geosciences.
The Andes - Active subduction orogeny. Springer Verlag (2006).
Earth and Planetary Science Letters.
Physics of the Earth and Planetary Interiors.
Journal of Structural Geology.
Journal of South American Earth Sciences.
Studia Geophysica et Geodaetica.
Revista de la Asociación Geológica Argentina.
National Agency of Scientific and Technological Promotion (ANPCyT - Argentina)
Mecánica Computacional.

Mother tongue	**Spanish**
Other language(s)	English and German

Third party Projects

2019-2022	*EOSC-Pillar*. Coordination and Harmonisation of National and Thematic Initiatives to support EOSC Funding Agency: H2020
2017-2020	*RISE*. Real-time Earthquake Risk Reduction for a Resilient Europe Funding Agency: H2020
2017-2020	*SERA*. Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe Funding Agency: H2020
2018-2019	*Geo-data-node*. Aufbau eines fachspezifischen Datenknotenpunkts Funding Agency: BMBF Position: GEOFON Data Expert.
2018-2020	*EOSC-hub*. European Open Science Cloud Hub Funding Agency: FP7 Position: GEOFON Data Expert.
2015-2019	*EPOS-IP*. European Plate Observing System - Implementation Phase Funding Agency: H2020 Position: GEOFON Data Expert.
2015-2020	Univ. of Potsdam/GeoForschungsZentrum *Surface processes, Tectonics and Georesources: The Andean foreland basin of Argentina (StRATEGy)*. Speaker: Prof. Dr. Manfred Strecker. Funding Agency: DFG Category: Co-PI of subproject.
2015-2018	*EUDAT2020*. Funding Agency: H2020 Category: Service Integrator / Development Group.
2013-2016	Helmholtz International Research Group *Geodynamic Evolution of the Neuquen Andes: Implications for Geo-Resources*. Funding Agency: Helmholtz Association Category: PI / Head of the research group.
2013-2014	*NERA*. Network of European Research Infrastructures for Earthquake Risk Assessment and Mitigation Funding Agency: FP7 Category: Developer.
2008	UBACyT - Univ. of Buenos Aires *Computational Methods in some topics of continuum mechanics*. Director: Prof. Dr. Pablo Jacovkis. Category: Researcher.
2004-2007	UBACyT - Univ. of Buenos Aires, Code: X-160 *Tectonic processes related to subduction. Comparative analysis*. Director: Prof. Dr. Víctor Ramos. Category: Research Assistant.

2004-2007	PICT - FONCYT, Code: 26001 *Wavelets and Neural Networks: Integrated Approaches and Applications*. Director: Prof. Dr. Ana M. C. Ruedin and Prof. Dr. Enrique Segura. Category: PhD Student.

Scientific Publications

Peer-reviewed full articles

Helle Pedersen, Jonathan Schaeffer, Florian Haslinger, Rob Casey, Javier Quinteros, Lesley Wyborn, Elisabetta D'Anastasio, Jonathan B. Hanson, and Jerry Carter. Report on doi, licence and citation uptake for seismological waveform data after 10 years of implementation effort. *Seismica*, Under Review, Submitted.

Jonathan Schaeffer, Helle Pedersen, Jarek Bienkowski, Christos Evangelidis, Vasilis Petrakopoulos, Javier Quinteros, Angelo Strollo, ORFEUS-EIDA Technical Committee, and Management Board. Data delivery indicators in eida: Designing a consistent metrics system in a distributed services environment. *Data Science Journal*, 2024. doi:10.5334/dsj-2024-051.

Javier Quinteros, Jerry A. Carter, Jonathan Schaeffer, Chad Trabant, and Helle A. Pedersen. Exploring approaches for large data in seismology: User and data repository perspectives. *Seismological Research Letters*, 2021. doi:10.1785/0220200390.

Javier Quinteros, Angelo Strollo, Peter L. Evans, Winfried Hanka, Andres Heinloo, Susanne Hemmleb, Laura Hillmann, Karl-Heinz Jaeckel, Rainer Kind, Joachim Saul, Thomas Zieke, and Frederik Tilmann. The geofon program in 2020. *Seismological Research Letters*, 2021. doi:10.1785/0220200415.

Angelo Strollo, Didem Cambaz, John Clinton, Peter Danecek, Christos P. Evangelidis, Alexandru Marmureanu, Lars Ottemöller, Helle Pedersen, Reinoud Sleeman, Klaus Stammler, Daniel Armbruster, Jarek Bienkowski, Kostas Boukouras, Peter L. Evans, Massimo Fares, Cristian Neagoe, Stefan Heimers, Andres Heinloo, Matthias Hoffmann, Philippe Kaestli, Valentino Lauciani, Jan Michalek, Erich Odon Muhire, Mehmet Ozer, Lucian Palangeanu, Constanza Pardo, Javier Quinteros, Matteo Quintiliani, Jose Antonio Jara-Salvador, Jonathan Schaeffer, Antje Schloemer, and Nikolaos Triantafyllis. Eida: the european integrated data archive and service infrastructure within orfeus. *Seismological Research Letters*, 2021. doi:10.1785/0220200413.

Matías Barrionuevo, Sibiao Liu, José Francisco Mescua, Daniel Yagupsky, Javier Quinteros, Laura Beatriz Giambiagi, Stephan Sobolev, Constanza Rodríguez Piceda, and Manfred Strecker. The influence of variations in crustal composition and lithospheric strength on the evolution of deformation processes in the southern central andes: Insights from geodynamic models. *International Journal of Earth Sciences*, 2021. doi:10.1007/s00531-021-01982-5.

Lucas Fennell, Javier Quinteros, and Andrés Folguera. *The Oligo-Miocene Tectonic Mode Switch: From a Brief Period of Widespread Extension to the Final Closure of the Neuquén Basin*, pages 417–429. Springer International Publishing, Cham, 2020. doi:10.1007/978-3-030-29680-3_17.

Riccardo Zaccarelli, Dino Bindi, Angelo Strollo, Javier Quinteros, and Fabrice Cotton. Stream2segment: an open source tool for downloading, processing and visualizing massive event-based seismic waveform datasets. *Seismological Research Letters*, 90:2028–2038, 2019. doi:10.1785/0220180314.

Vasily Bunakov, Alexander Atamas, Alexia de Casanove, Pascal Dugénie, Rene van Horik, Simon Lambert, Javier Quinteros, and Linda Reijnhoudt. Data Curation Policies and Data Provenance in EUDAT Collaborative Data Infrastructure. In Leonid Kalinichenko, Yannis Manolopoulos, Oleg Malkov, Nikolay Skvortsov, Sergey Stupnikov, and Vladimir Sukhomlin, editors, *Data Analytics and Management in Data Intensive Domains*, Communications in Computer and Information Science, pages 249–263, Cham, 2018. Springer International Publishing. doi:10.1007/978-3-319-96553-6_18.

Marzieh Baes, Stephan V. Sobolev, and Javier Quinteros. Subduction initiation in mid-ocean induced by mantle suction flow. *Geophysical Journal International*, 215:1515–1522, 2018. doi:10.1093/gji/ggy335.

Harald Schuh, James Anderson, Georg Beyerle, Galina Dick, Frank Flechtner, Christoph Förste, Maorong Ge, Susanne Glaser, Robert Heinkelmann, Rolf König, Benjamin Männel, Ingo Michaelis, Javier Quinteros, Markus Ramatschi, Jan Rauberg, Martin Rother, Torsten Schmidt, Claudia Stolle, and Jens Wickert. Big data in geodäsie, seismologie und geomagnetismus. *System Erde*, 8:40–47, 2018. doi:10.2312/GFZ.syserde.08.01.6.

Lucas M. Fennel, Javier Quinteros, Sofía B. Iannelli, Vanesa D. Litvak, and Andrés Folguera. The role of the slab pull force in the late oligocene to early miocene extensional regime in the central andes (27°-46°s): Insights from numerical modeling. *Journal of South-American Earth Sciences*, Online since Feb 1st 2018, 2018. doi:10.1016/j.jsames.2017.12.012.

Daniel Melnick, Marcos Moreno, Javier Quinteros, Juan Carlos Baez, Zhiguo Deng, Shaoyang Li, and Onno Oncken. The super-interseismic phase of the megathrust earthquake cycle in Chile. *Geophysical Research Letters*, 44:784–791, 2017. doi:10.1002/2016GL071845.

Daria Cyprych, Sascha Brune, Sandra Piazolo, and Javier Quinteros. Strain localization in polycrystalline material with second phase particles: Numerical modeling with application to ice mixtures. *Geochemistry, Geophysics, Geosystems*, 17:3608–3628, 2016. doi:10.1002/2016GC006471.

Peter D. Clift, Sascha Brune, and Javier Quinteros. Climate changes control offshore crustal structure at South China Sea continental margin. *Earth and Planetary Science Letters*, 420:66–72, 2015. doi:10.1016/j.epsl.2015.03.032.

Erik Duesterhoeft, Javier Quinteros, Roland Oberhaensli, Romain Bousquet, and Christian de Capitani. Relative impact of mantle densification and eclogitization of slabs on subduction dynamics: a numerical thermodynamic/thermokinematic investigation of metamorphic density evolution. *Tectonophysics*, 637:20–29, 2014. doi:10.1016/j.tecto.2014.09.009.

Javier Quinteros and Stephan V. Sobolev. Why has the Nazca plate slowed since the Neogene? *Geology*, 41(1):31–34, 2013. doi:10.1130/G33497.1.

Daniel Melnick, Yannick Garcin, Javier Quinteros, Manfred R. Strecker, Daniel Olago, and Jean-Jacques Tiercelin. Steady rifting in northern Kenya inferred from deformed Holocene lake shorelines of the Suguta and Turkana basins. *Earth and Planetary Science Letters*, 331–332:335–346, 2012. doi:10.1016/j.epsl.2012.03.007.

Javier Quinteros and Stephan V. Sobolev. Constraining kinetics of metastable olivine in Marianas slab from seismic observations and dynamic models. *Tectonophysics*, 526–529:48–55, 2012. doi:10.1016/j.tecto.2011.11.005.

Alejandro D. Otero and Javier Quinteros. General parallel finite/spectral-element oriented C/C++ framework. In P. Iványi and B. H. V. Topping, editors, *Proceedings of the Second International Conference on Parallel, Distributed, Grid and Cloud Computing for Engineering*. Civil-Comp Press, Stirlingshire, UK, 2011. Paper 68. doi:10.4203/ccp.95.68.

Javier Quinteros, Stephan V. Sobolev, and Anton A. Popov. Viscosity in transition zone and lower mantle. Implications for slab penetration. *Geophysical Research Letters*, 37:L09307, 2010. doi:10.1029/2010GL043140.

Matías C. Ghiglione, Javier Quinteros, Daniel Yagupsky, Pedro Bonillo-Martínez, Julio Hlebszevtich, Víctor A. Ramos, Gustavo Vergani, Daniel Figueroa, Santiago Quesada, and Tomás Zapata. Structure and tectonic history of the foreland basins of southernmost South America. *Journal of South American Earth Sciences*, 29(2):262–277, 2010. doi:10.1016/j.jsames.2009.07.006.

Gabriel H. Bursztyn, Javier Quinteros, and Alejandro D. Otero. An object oriented version of the Kinematic Laplacian Equation Method. In Eduardo Dvorkin, Marcela Goldschmit, and Mario Storti, editors, *Mecánica Computacional*, volume XXIX, pages 2095–2110. Buenos Aires, Argentina, 2010.

Javier Quinteros and Alejandro D. Otero. Towards parallel solution of continuous problems by means of a general finite/spectral-element oriented C/C++ framework. In 39° *International Conference on Computer Science and Operational Research*, pages 3195–3210. Buenos Aires, Argentina, 2010.

Javier Quinteros, Víctor A. Ramos, and Pablo M. Jacovkis. An elasto-visco-plastic model using the finite element method for crustal and lithospheric deformation. *Journal of Geodynamics*, 48(2):83–94, 2009. doi:10.1016/j.jog.2009.06.006.

Gabriel H. Bursztyn, Alejandro D. Otero, and Javier Quinteros. Una nueva implementación para las ecuaciones de Navier-Stokes mediante KLE y elementos espectrales. In *Mecánica Computacional*, volume XXVII, pages 2367–2383. San Luis, Argentina, 2008.

Javier Quinteros and Martín V. Kind. A wavelet-based methodology for data integration in reservoir modeling. In Pablo Agraz, Claudio Larriestra, Horacio Verdur, Aldo Montagna, and José Massaferro, editors, *Modelado Geológico*, pages 239–261. Instituto Argentino del Petróleo y del Gas, Mar del Plata, Argentina, 2008.

Javier Quinteros, Pablo M. Jacovkis, and Víctor A. Ramos. Diseño flexible y modular de modelos numéricos basados en Elementos Finitos. In Sergio A. Elaskar, Elvio A. Pilotta, and Germán A. Torres, editors, *Mecánica Computacional*, volume XXVI, pages 1724–1740. Córdoba, Argentina, 2007.

Martín V. Kind and Javier Quinteros. History-Matched Reservoir Model Validation based on Wavelets Methods. In *2007 SPE Latin American and Caribbean Petroleum Engineering Conference*, page 11 pp. Buenos Aires, Argentina, Apr 2007. doi:10.2118/108124-MS.

Javier Quinteros, Pablo M. Jacovkis, and Víctor A. Ramos. Evolution of the Upper Crustal Deformation in Subduction Zones. *Journal of Applied Mechanics*, 73(6):984–994, 2006. doi:10.1115/1.2204962.

Javier Quinteros, Pablo M. Jacovkis, and Víctor A. Ramos. Formación de cordilleras y delaminación litosférica. un modelo elasto-visco-plástico mediante elementos finitos. In Alberto Cardona, Norberto Nigro, Victorio Sonzogni, and Mario Storti, editors, *Mecánica Computacional*, volume XXV, pages 2669–2686. Santa Fe, Argentina, 2006.

Javier Quinteros, Víctor A. Ramos, and Pablo M. Jacovkis. Modelado Numérico para la deformación de la corteza superior en los Andes Australes. *Revista de la Asociación Geológica Argentina*, 60(4):714–723, 2005.

Javier Quinteros, Pablo M. Jacovkis, and Víctor A. Ramos. Modelado numérico del levantamiento orogénico y su potencial relación con clima y erosión. In Gustavo C. Buscaglia, Enzo A. Dari, and Oscar M. Zamonsky, editors, *Mecánica Computacional*, volume XXIII, pages 2923–2931. Bariloche, Argentina, Nov 2004.

Javier Quinteros and Ana M. C. Ruedin. Minimization of errors in L4-norm for decoding quantized data: its application to quantization of wavelet coefficients. In 33° *International Conference on Computer Science and Operational Research*, Córdoba, Argentina, Sep 2004.

Javier Quinteros and Ana M. C. Ruedin. Quantization of wavelet coefficients. In 32° *International Conference on Computer Science and Operational Research*, Buenos Aires, Argentina, Sep 2003.

Technical and Data Reports

Angelo Strollo, Peter Evans, Andres Heinloo, Susanne Hemmleb, Laura Hillmann, K.-H. Jäckel, Javier Quinteros, Joachim Saul, Riccardo Zaccarelli Thomas Zieke, and Frederik Tilmann. GEOFON Annual Report 2019. Scientific technical report str, GFZ German Research Centre for Geosciences, Potsdam, 2020. doi:10.2312/GFZ.b103-20035.

Boris Radosavljevic, Roland Bertelmann, Kirsten Elger, Christian Haberland, Susanne Hemmleb, Gerard Munoz Soler, Javier Quinteros, and Angelo Strollo. Report on the survey of digital data management practices at the GFZ german research centre for geosciences. Technical report, Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences, 2019. doi:10.2312/gfz.b103-19029.

Boris Radosavljevic, Javier Quinteros, Roland Bertelmann, Susanne Hemmleb, Kirsten Elger, Christian Haberland, Gerard Muñoz, and Angelo Strollo. Survey of Digital Data Management Practices at the GFZ German Research Centre for Geosciences, 2019. doi:10.5880/GFZ.LIS.2019.001.

Tobias Weigel, Bridget Almas, Frederik Baumgardt, Thomas Zastrow, Ulrich Schwardmann, Maggie Hellström, Javier Quinteros, and Dirk Fleischer. Recommendation on research data collections. Technical report, Research Data Alliance, Submitted. doi:10.15497/RDA00022.

Invited speaker in Scientific Meetings

Javier Quinteros and the GEOFON Team. The GEOFON experience and posible collaborations with Armenia. In *4th Eastern Partnership E-Infrastructure Conference*, Yerevan, Armenia, September 2019. EaPConnect.

Javier Quinteros and the GEOFON Team. Selecting an appropriate license for open data. the geofon experience. In *IG RDA/CODATA Legal Interoperability*, Berlin, Germany, Mar 2018. Research Data Alliance - 11th Plenary.

Javier Quinteros and the GEOFON Team. Geofon use case. In *WG Persistent Identification of Instruments*, Berlin, Germany, Mar 2018. Research Data Alliance - 11th Plenary.

Javier Quinteros and the GEOFON Team. Geofon use case. In *WG Research Data Collections*, Berlin, Germany, Mar 2018. Research Data Alliance - 11th Plenary.

Javier Quinteros and the GEOFON Team. Realtime data in seismology. status and challenges for the future. In *Real-Time Data Processing As A New Challenge In Research And Industry*, Berlin, Germany, Mar 2018. Research Data Alliance - 11th Plenary.

Javier Quinteros. Seismology in 21st century: from seismic stations to a professional data center. In *4th KSETA Plenary Workshop 2017*, Durbach, Germany, Feb 2017.

Javier Quinteros. From seismic stations to integrated datacenters and computational facilities. In *Large Scale Data Management and Analysis (LSDMA) Symposium*, Karlsruhe, Germany, Nov 2015.

Javier Quinteros. ¿Por qué se desacelera la convergencia entre Nazca y Sudamérica desde el Neógeno? Una nueva perspectiva desde los modelos numéricos de subducción. In *IDEAN Seminaries*, Buenos Aires, Argentina, Oct 2012. Instituto de Estudios Andinos - Universidad de Buenos Aires.

Javier Quinteros. Did the Andes slow down the convergence between Nazca and South America? Insight from numerical models of subduction. In *Goldschmidt lecture series*, Trondheim, Norway, Dec 2010. NGU - Geological Survey of Norway.

Javier Quinteros. Constraining nature. Insight from numerical models of subduction. In *Seminaries of Geodynamic*, Prague, Czech Republic, Nov 2010. Institute of Geophysics - Charles University in Prague.

Javier Quinteros. Viscosity in the transition zone - Constraints from numerical models. In *c2c Project - Core to Crust: the fate of subducted material*, Trondheim, Norway, Jun 2010. Keynote speaker.

Javier Quinteros. Numerical modelling of Plate Tectonics - The whole world inside equations. In *Jornadas sobre Estructuras en las Ciencias*, Buenos Aires, Argentina, Nov 2006. Cátedra Walter Gropius (FADU-UBA) y el Servicio Alemán de Intercambio Académico (Deutscher Akademischer Austauschdienst).

Javier Quinteros, Pablo M. Jacovkis, and Víctor A. Ramos. Efectos de la erosión en el levantamiento de los Andes: un modelo matemático. In *Segundas Jornadas sobre Ecuaciones Diferenciales, Optimización y Análisis Numérico*, Córdoba, Argentina, Mar 2005. Proyecto “Partial Differential Equations and Numerical Optimization with Applications”, subsidiado por la Fundación Antorchas.

Awards

Doctoral scholarship financed by the National Council for Scientific and Technical Research (CONICET) - (Apr-2004 / Mar-2008).

Javier Quinteros. Asignación óptima de bits en la cuantización de la transformada wavelet y multiwavelet, May 2003. Best National Thesis Prize - EST'03 in the 32^{nd} International Conference on Computer Science and Operational Research (JAIIO 2003).