

Jean-Baptiste Ammirati, Ph.D

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RESEARCH EXPERTISE:

Skills and Qualifications

- Seismology
- Signal analysis
- Inverse problems
- Seismic deployment
- Tectonics
- Structural geology
- Written and oral communications

Computing skills: Shell, Fortran, Matlab, Python, SAC, GMT

Languages: French (Mother tongue), English (Fluent), Spanish (Fluent)

EDUCATION

2012-2016

National University of San Juan, Argentina

- PhD in GEOPHYSICS

Dissertation: "Study of the Lithospheric Structure of the Precordillera (Argentina) and Relationships with Active Deformation"

Advisor: Dr. Patricia Alvarado

2011

University of Nice – Sofia Antipolis, France

- Master in GEOSCIENCES

Dissertation: "Study of the variability of the seismic source properties: Application to major subduction earthquakes ($M_w > 7.0$) between 1994 and 2011" (in French)

Advisor: Dr. Martin Vallée

2008

- Master in APPLIED GEOLOGY

Dissertation: "Geotechnical studies for construction and civil engineering" (in French)

Advisor: Nicolas Nieto

2006

- License (French bachelor equivalent) in GEOSCIENCES

APPOINTMENTS

- Postdoctoral Fellow, University of Chile, 2017
- Visiting Researcher, Jackson School of Geosciences, University of Texas Austin. 2015
- Visiting Researcher, Department of Geosciences, The University of Arizona. 2014
- Teacher Assistant, Department of Geophysics and Astromomy, National University of San Juan, 2013-14
- Research assistant, Geoazur, University of Nice – Sofia Antipolis, 2011
- Geotechnical engineer, Hydrogéotechnique, Nancy (France), 2008-09

RESEARCH/ PROFESSIONAL EXPERIENCE

Since 03/17

Postdoctoral Fellow

National Seismic Center (CSN), University of Chile

- Monitoring and characterization of the San Ramón fault, Santiago metropolitan Area, western Andean thrust, Central Chile

- 12/15 **Visiting researcher**
Jackson School of Geosciences, University of Texas Austin
- IPGST seminar. “Seismic imaging of Geologic structure and tectonic implications”
- 10/14 – 12/14 **Visiting researcher**
Department of Geosciences, The University of Arizona
- Developed a new approach for seismic data selection based on waveform cross-correlation
 - Computed high-frequency receiver functions
- 01/11 – 03/11 **Research assistant**
Geoazur, University of Nice – Sofia Antipolis (France)
- Contributed to the integration of shear-waves for seismic localization using a 3D regional velocity model.
- 03/08 – 12/09 **Geotechnical engineer**
Hydrogéotechnique S.A., Nancy (France)
- Did quotations for geotechnical studies
 - Sized and designed foundations for buildings and bridges
 - Presented results in reports and meetings

TEACHING EXPERIENCE

- 2013 – 2014
- Teaching Assistant, Department of geophysics and Astronomy, National University of San Juan, Physics of the Earth: Introduction to geophysics, earthquake, geomagnetism, and gravity. Helped students with practical and field works.
- 2018
- Workshop “*Practical tools for tectonics and geomorphology*”, University of Chile. Introduction to Linux OS, Shell scripting and map making with GMT
- 2019
- Workshop “*Computer programming for geoscience*”, University of Chile. Using Matlab to solve basic but common problems in geosciences.

GRANTS/ SCHOLARSHIPS

- ANID-FONDECYT, “The Crustal Structure of Central Chile from Broadband Seismological Data: Implications for Andean Tectonics and Seismic Hazard” 2020-2023, ~US\$120,000
- CONICET, “*Estudio de la estructura cortical y litosférica en las Sierras Pampeanas Orientales y deformación activa asociada*”, 2017-2019, ~US\$37,500
- PDTS-CICICTA-UNSJ, “*Desarrollo y aplicación conjunta de técnicas sismológicas para caracterizar la cuenca sedimentaria del Valle de Tulum, San Juan, Argentina*”, 2016 – 2017, ~US\$5,500
- CONICET, “*Estudio de la estructura cortical y litosférica en torno a la zona de subducción horizontal Pampeana (31°S) y deformación activa asociada*”, 2015 – 2016, ~US\$35,000
- UNSJ-CICITCA, “*Evaluación del peligro sísmico en el retroarco Andino (30°-32°S) considerando análisis de VS30*”, 2014 – 2015, ~US\$1,500
- UNSJ-CICITCA, “*Deformación cortical reciente en la area epicentral del terremoto de San Juan de 1894 con sismología de banda ancha*”, 2014 – 2015, ~US\$4,000

- UNSJ-CICITCA, “Correlacion Bioestratigráfica e Integracion de los afloramientos neopaleozoicos de la Sierra de Mogna al contexto paleogeografico actual”, 2013 – 2014, ~US\$1,500
- ANPCyT-FONCyT, “Estudio de la deformación litosférica de la Precordillera occidental y deformación activa asociada”, 2012 – 2015, ~US\$54,000

PUBLICATIONS

- Venerdini, A., Alvarado, P., **Ammirati, J.-B.**, Podesta, M., Lopez, L., Fuentes, F., Linkimer, L., Beck, S., 2020. Crustal seismicity in the Andean Precordillera of Argentina using seismic broadband data, *Tectonophysics* 786, 228450, <https://doi.org/10.1016/j.tecto.2020.228450>
- Mackaman-Lofland, C., Horton, B., Fuentes, F., Constenius, K., Capaldi, T.N., Stokli, D., **Ammirati J.-B.**, Alvarado, P., Orozco, P., 2020. Andean Mountain Building and Foreland Basin Evolution During Thin- and Thick-Skinned Neogene Deformation (32–33°S), *Tectonics* 39(3), <https://doi.org/10.1029/2019TC005838>
- **Ammirati, J.-B.**, Vargas, G., Potin, B., Abrahami, R., Rebolledo, S., Ruiz, S., 2019. The crustal seismicity of the western Andean thrust (Central Chile, 33-34°S): Implications for regional tectonics and seismic hazard in the Santiago area, *Bull. Seismol. Soc. Am.*, <https://doi.org/10.1785/0120190082>
- Ruiz, S., **Ammirati J.-B.**, Leyton, F., Cabrera, L., Potin, B., Madariaga, R., 2019. The Mw6.7 Coquimbo earthquake: Insights from a seismic sequence within the Nazca plate, *Seismol. Res. Lett.*, doi: 10.1785/0220190079
- **Ammirati, J.-B.**, Venerdini, A., Alcacer J.M., Alvarado, P., Gilbert H., 2018. New Insights on regional tectonics and basement composition beneath the eastern Sierras Pampeanas (Argentine back-arc region) from seismological and gravity data, *Tectonophysics* 740-741, doi: 10.1016/j.tecto.018.05.015
- Ahumada, M.F., Castro de Machuca, B., Alvarado, P. **Ammirati, J.-B.**, Lopez, M.G., 2016. Modelo petrofísico del borde oriental de las Sierras de Valle Fértil-La Huerta, Argentina, a partir de datos sismológicos y petrológicos, *Rev. Mex. Cienc. Geol.*, 34(1), 1-11, doi: 10.22201/cgeo.20072902e.2017.1.411
- **Ammirati, J.-B.**, Pérez Luján, S., Alvarado, P., Beck, S., Rocher, S., Zandt, G. 2016. High-resolution images above the Pampean flat slab of Argentina (31-32°S) from local receiver functions: Implications on regional tectonics, *Earth Planet. Sci. Lett.*, 450, 29-39, <http://dx.doi.org/10.1016/j.epsl.2016.06.018>
- Venerdini, A., Sánchez, G., Alvarado, P., Bilbao, I., **Ammirati, J.-B.**, 2016. Nuveas determinaciones de velocidades de ondas P y ondas S para la corteza en el retroarco andino, *Rev. Mex. Cienc. Geol.*, 33 (1), 59-71.
- Pérez Luján, S., **Ammirati, J.-B.**, Alvarado, P., Vujovich, G. I. 2015. Constraining a mafic thick crust model in the Andean Precordillera of the Pampean flat slab subduction region, *J. South Am. Earth Sci*, 64, 325-338, <http://dx.doi.org/10.1016/j.jsames.2015.09.005>
- **Ammirati, J.-B.**, Alvarado, P., Beck, S., 2015. A lithospheric velocity model for the flat slab region of Argentina from joint inversion of Rayleigh wave phase velocity dispersion and teleseismic receiver functions. *Geophys. J. Int.*, 202, 224-241, doi: 10.1093/gji/ggv140
- Pérez Luján, S., **Ammirati, J.-B.**, Alvarado P., Vujovich, G., 2013. New petrological and seismological crustal model of the Sierra de la Invernada, Central Precordillera of San Juan (31°S), Argentina, *B. Geofis. Teor. App.*, 54, Supplement 2, 92-95.

- **Ammirati, J.-B.**, Alvarado, P., Perarnau, M., Saez, M., Monsalvo, G., 2013. Crustal structure of the Central Precordillera of San Juan, Argentina (31°S) using teleseismic receiver functions, *J. South Am. Earth Sci.*, 46, 100-109, <http://dx.doi.org/10.1016/j.jsames.2013.05.007>.

PRESENTATIONS

- **Ammirati, J.-B.**, Flores, M.C., Ruiz S., Aden-Antoniow F., Potin B., Constraining the seismicity associated to the Magallanes-Fagnano fault zone, Southern Chile and Argentina (52-55°S), AGU fall meeting, San Francisco, 2019 (poster)
- **Ammirati, J.-B.**, Vargas, G., Potin, B., Abrahami, R., Layton, P., Rebolledo, S., New constraints on the crustal seismicity of the Central Andes (33-34°S): Implications for regional tectonics and seismic hazard, XV Congreso Geológico, Concepción, Chile, 2018 (poster)
- **Ammirati, J.-B.**, Venerdini, A., Alvarado, P., Gilbert, H., New insights on regional tectonics and crustal composition of the eastern Sierras Pampeanas in the Andean back arc region, Argentina (31-32°S), AGU fall meeting, New Orleans, 2017 (talk)
- **Ammirati, J.-B.**, Potin, B., Vargas, G., Abrahami, R., Rebolledo, S., Barrientos, S., A closer look to the San Ramón fault seismicity in the west Andean thrust front of Santiago, Chile, AGU fall meeting, New Orleans, 2017 (poster)
- **Ammirati, J.-B.**, Pérez Luján, S., Alvarado P., Beck, S., Porter, R., Zandt, G., High resolution crustal structure for the region between Chilenia and Cuyania terrane above the Pampean flat slab region of Argentina from local receiver function and petrological analyses, AGU fall meeting, San Francisco, 2015 (talk)
- **Ammirati, J.-B.**, Alvarado, P., Beck, S., A lithospheric velocity model for the Pampean flat slab region from surface wave dispersion and teleseismic receiver functions. AGU fall meeting, San Francisco, 2014 (poster)
- **Ammirati, J.-B.**, Alvarado, P., Julià, J., Lithospheric velocity model of the flat slab region of Argentina from joint inversion of Rayleigh-waves and teleseismic receiver functions. XIX Congreso Geológico Argentino, Córdoba, Argentina, 2014 (talk, in Spanish)
- **Ammirati, J.-B.**, Alvarado, P., Perarnau, M., Saez, M., Monsalvo, G., Crustal structure of the Central Precordillera of San Juan, Argentina (31°S) using teleseismic receiver functions. XV Reunión de Tectónica, San Juan, Argentina, 2012 (talk, in Spanish)