

Silvia Brizzi, Ph.D.

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ResearchGate

Google Scholar

Employment History

- 2023 – 2025 **Fixed-term researcher**, *Department of Science*, University of Roma Tre
PNRR Project MEET: Monitoring Earth's Evolution and Tectonics
Advisors: F. Funicello
- 2022 – 2023 **Postdoctoral Fellow**, *Department of Science*, University of Roma Tre
Structuring and consolidation of the EPOS ITA Labs community
• Develop and manage digital content for TCS Multi-scale Laboratories pages of EPOS ITA website
• Coordinate website TCS Multi-Scale Laboratories teams
Advisor: F. Funicello
- 2020 – 2022 **Postdoctoral fellow**, *Jackson School of Geosciences*, UT Austin
Numerical modeling of long-term subduction dynamics
Advisors: T.W. Becker & C. Faccenna
- 2018 – 2020 **Postdoctoral fellow**, *SCVSA Department*, University of Parma
Rheological characterization of magnetorheological materials for analog modeling
Advisor: F. Storti
- 2017 – 2018 **Postdoctoral fellow**, *Department of Science*, University of Roma Tre
Analog and numerical modeling of megathrust seismicity
Advisor: F. Funicello

Education

- 2014 – 2017 **Ph.D.** in Earth Sciences (with distinction), *Department of Science*, University of Roma Tre
Thesis title: *Analysis of the controlling factors able to generate mega-earthquakes along the subduction thrust fault*
Supervisors: F. Funicello, F. Corbi, Y. van Dinther, L. Sandri, A. Heuret
- 2014 **Professional Geologist licensing examination**, *Department of Science*, University of Roma Tre
- 2011 – 2014 **M.Sc.** in Earth Sciences (cum laude), *Department of Science*, University of Roma Tre
Thesis title: *Mega-earthquakes: analog modelling of the subduction thrust fault seismicity*
Supervisors: F. Funicello, F. Corbi
- 2007 – 2011 **B.Sc.** in Earth Sciences (cum laude), *Department of Science*, University of Roma Tre

Research Publications

Journal Articles

- Brizzi, S.**, CavoZZi, C., & Storti, F. (2023). Smart materials for experimental tectonics: Viscous behavior of magnetorheological silicones. *Tectonophysics*, 867, 230038. [doi:doi.org/10.1016/j.tecto.2023.230038](https://doi.org/10.1016/j.tecto.2023.230038)
- Menichelli, I., Corbi, F., **Brizzi, S.**, van Rijnsingen, E., Lallemand, S., & Funicello, F. (2023). Seamount subduction and megathrust seismicity: The interplay between geometry and friction. *Geophysical Research Letters*, 50(9), e2022GL102191. [doi:doi.org/10.1029/2022GL102191](https://doi.org/10.1029/2022GL102191)
- Brizzi, S.**, Becker, T., Faccenna, C., Behr, W., van Zelst, I., Dal Zilio, L., & van Dinther, Y. (2021). The role of sediment accretion and buoyancy on subduction dynamics and geometry. *Geophysical Research Letters*, 48(20), e2021GL096266. [doi:doi.org/10.1029/2021GL096266](https://doi.org/10.1029/2021GL096266)
- Brizzi, S.**, van Zelst, I., Funicello, F., Corbi, F., & van Dinther, Y. (2020). How sediment thickness influences subduction dynamics and seismicity. *Journal of Geophysical Research: Solid Earth*, 125(8), e2019JB018964. [doi:doi.org/10.1029/2019JB018964](https://doi.org/10.1029/2019JB018964)
- Corbi, F., Sandri, L., Bedford, J., Funicello, F., **Brizzi, S.**, Rosenau, M., & Lallemand, S. (2019). Machine learning can predict the timing and size of analog earthquakes. *Geophysical Research Letters*, 46(3), 1303–1311. [doi:doi.org/10.1029/2018GL081251](https://doi.org/10.1029/2018GL081251)

- 6 **Brizzi, S.**, Sandri, L., Funicello, F., Corbi, F., Piromallo, C., & Heuret, A. (2018). Multivariate statistical analysis to investigate the subduction zone parameters favoring the occurrence of giant megathrust earthquakes. *Tectonophysics*, 728, 92–103. [doi:doi.org/10.1016/j.tecto.2018.01.027](https://doi.org/10.1016/j.tecto.2018.01.027)
- 7 Corbi, F., Funicello, F., **Brizzi, S.**, Lallemand, S., & Rosenau, M. (2017). Control of asperities size and spacing on seismic behavior of subduction megathrusts. *Geophysical Research Letters*, 44(16), 8227–8235. [doi:doi.org/10.1002/2017GL074182](https://doi.org/10.1002/2017GL074182)
- 8 **Brizzi, S.**, Funicello, F., Corbi, F., Di Giuseppe, E., & Mojoli, G. (2016). Salt matters: How salt affects the rheological and physical properties of gelatine for analogue modelling. *Tectonophysics*, 679, 88–101. [doi:doi.org/10.1016/j.tecto.2016.04.021](https://doi.org/10.1016/j.tecto.2016.04.021)

Book chapters

- 1 **Brizzi, S.** (2019). On the relationships between geodynamics and megathrust seismicity. In R. M. in Earth Systems & E. Sciences (Eds.). [doi:doi.org/10.1016/B978-0-12-409548-9.11666-5](https://doi.org/10.1016/B978-0-12-409548-9.11666-5)

Conference Proceedings

- 1 **Brizzi, S.** (2023). Sediments in subduction zones: Investigating their role on subduction dynamics with numerical modeling. In *Cargèse 2023 School on Subduction Zone Processes*.
- 2 **Brizzi, S.**, Becker, T., Faccenna, C., Behr, W., van Zelst, I., Dal Zilio, L., & van Dinther, Y. (2023). The role of sediments on subduction dynamics and geometry: Insights from numerical modeling. In *Egu General Assembly Conference Abstracts* (p. 5221).
- 3 **Brizzi, S.**, Menichelli, I., Corbi, F., van Rijsingen, E., Funicello, F., & Lallemand, S. (2023). The influence of seamount subduction on megathrust seismicity: The interplay between geometry and friction. In *Proceedings of GeoMod2023* (p. 62).
- 4 **Brizzi, S.**, Becker, T., Faccenna, C., Behr, W., van Zelst, I., Dal Zilio, L., & van Dinther, Y. (2021). The influence of sediment accretion and transport on subduction zone dynamics. In *Agu Fall Meeting Abstracts* (Vol. 2021, T25C–0182).
- 5 **Brizzi, S.**, Becker, T. W., Faccenna, C., van Zelst, I., & van Dinther, Y. (2020). The influence of sediment thickness on subducting plate velocity. In *Agu Fall Meeting Abstracts* (Vol. 2020, T057–03).
- 6 **Brizzi, S.**, van Dinther, Y., van Zelst, I., Funicello, F., & Corbi, F. (2019). Sediment thickness and its influence on subduction dynamics and seismicity. In *Agu Fall Meeting Abstracts* (Vol. 2019, T31C–04).
- 7 van Dinther, Y., van Zelst, I., Brizzi, S., van Rijsingen, E., & Funicello, F. (2019). Tsunamigenic earthquakes preferentially occur in sediment-starved subduction zones with a rough incoming seafloor. In *Agu Fall Meeting Abstracts* (Vol. 2019, U13C–09).
- 8 van Zelst, I., **Brizzi, S.**, van Dinther, Y., Funicello, F., & Heuret, A. (2018). The influence of subduction zone tectonics on earthquake-generated tsunamis. In *Egu General Assembly Conference Abstracts* (p. 7379).
- 9 **Brizzi, S.**, Funicello, F., Corbi, F., Sandri, L., van Zelst, I., Heuret, A., ... van Dinther, Y. (2017). What favors the occurrence of subduction mega-earthquakes? In *Egu General Assembly Conference Abstracts* (p. 557).
- 10 **Brizzi, S.**, van Zelst, I., van Dinther, Y., Funicello, F., & Corbi, F. (2017). How long-term dynamics of sediment subduction controls short-term dynamics of seismicity. In *Agu Fall Meeting Abstracts* (Vol. 2017, T11E–03).
- 11 Corbi, F., Funicello, F., **Brizzi, S.**, & Lallemand, S. (2017). Asperities synchronization and triggering of subduction mega-earthquakes: Insights from 3d analog models. In *Egu General Assembly Conference Abstracts* (p. 4884).
- 12 Corbi, F., Funicello, F., **Brizzi, S.**, Lallemand, S., & Rosenau, M. (2017). Control of asperities size and spacing on seismic behavior of subduction megathrusts: Insights from seismo-tectonic scale models. In *Agu Fall Meeting Abstracts* (Vol. 2017, T31A–0607).
- 13 van Zelst, I., **Brizzi, S.**, van Dinther, Y., Heuret, A., & Funicello, F. (2017). Identifying tectonic parameters that influence tsunamigenesis. In *Egu General Assembly Conference Abstracts* (p. 14484).

- 14 **Brizzi, S.**, Funicello, F., Corbi, F., Di Giuseppe, E., & Mojoli, G. (2016). Salt matters: Modifying gelatine rheology for subduction thrust fault seismicity models. In *Egu General Assembly Conference Abstracts* (p. 618).
- 15 Corbi, F., Funicello, F., **Brizzi, S.**, van Rijsingen, E., Lallemand, S., Dominguez, S., & Cattin, R. (2016). Control of barrier width on asperities synchronization and genesis of great megathrust earthquakes. In *Proceedings of GeoMod2016* (Vol. 2016, S4–7).
- 16 Corbi, F., Funicello, F., **Brizzi, S.**, & Lallemand, S. (2016). Asperities interaction through subsequent seismic cycles: Insights from 3d analog models. In *Agu Fall Meeting Abstracts* (Vol. 2016, T13A–2673).
- 17 van Zelst, I., **Brizzi, S.**, Heuret, A., Funicello, F., & van Dinther, Y. (2016). Identifying tectonic parameters that affect tsunamigenesis. In *Agu Fall Meeting Abstracts* (Vol. 2016, NH43A–1803).
- 18 **Brizzi, S.**, Corbi, F., Funicello, F., & Moroni, M. (2015). Analogue models of subduction megathrust earthquakes: Improving rheology and monitoring technique. In *Egu General Assembly Conference Abstracts* (p. 6399).
- 19 **Brizzi, S.**, Corbi, F., Funicello, F., & Moroni, M. (2014). Analogue models of subduction megathrust earthquakes: Analyzing the viscoelastic rheological parameter space with an innovative monitoring technique. In *Proceedings of GeoMod2014* (Vol. Seismo-Tectonics, pp. 14–16).

Mentoring, Outreach & Synergistic activities

Students

- 2019 ■ Claudio Lusuardi, **M.Sc. thesis co-supervisor**, University of Parma
- 2017 ■ Margherita Fittipaldi, **M.Sc. level, internship supervisor**, University of Roma Tre
- 2016 ■ Erika Cipettini, **M.Sc. level, internship supervisor**, University of Roma Tre
- David Scaccia, **M.Sc. level, internship supervisor**, University of Roma Tre

Outreach

- 2023 ■ Outreach activities for high schools within the *Orientamento Next Generation* programme
- 2021 ■ Mentor for the Undergraduate Research Traineeship Experience
The University of Texas at Austin
- 2019 – ... ■ Member of the ECS Tectonophysics Revival Task Force (AGU)
- 2018 – ... ■ Social Media manager for EGU Tectonics & Structural Geology division
- 2014 – ... ■ Hands-on activities during the European Researchers' Night
(University of Roma Tre and University of Parma)

Synergistic activities

- 2021 – ... ■ Topic Editor, *Frontiers in Earth Science*
- 2019 – ... ■ Judge for Outstanding Student Poster Awards (AGU and EGU)
- 2018 – ... ■ Reviewer for *JGR: Solid Earth, Tectonics, Tectonophysics, EGU Solid Earth, G3, Science Advances*
- 2021 – 2022 ■ Session convener: EGU2022: Inter- and intraplate seismicity in subduction zones,
AGU2021: Unusual subduction processes

Teaching

- 2023 ■ **Lecturer**, Introduction to MATLAB (graduate level), University of Roma Tre
- 2021 – 2022 ■ **Guest lecturer**, Tectonics and Geodynamics (graduate level), UT Austin
- 2019 – 2022 ■ **Teaching assistant**, Introduction to MATLAB (graduate level), University of Roma Tre
- 2020 ■ **Guest lecturer**, Marine Tectonics (graduate level), UT Austin
- 2015 – 2017 ■ **Guest lecturer**, Experimental Tectonics (M.Sc. level), University of Roma Tre
- 2016 ■ **Guest lecturer**, Geodynamics (M.Sc. level), University of Roma Tre

Teaching (continued)

- **Guest lecturer**, Summer School: *"Thermal convection in complex fluids: from laboratory to mantle dynamics"* (graduate level), Université Paris-Sud

Awards & Support

- 2021 ■ **UT Staff Council Professional Development Grant**, (1500\$), UT Austin
- 2018 ■ **Renato Funicello Award**, – Best PhD thesis, Dept. Science, University of Roma Tre
- 2017 ■ **Early Career Scientist's Roland Schlich Travel Grant**, European Geoscience Union
- **AGU Fall Meeting General Student Travel Grant**, American Geophysical Union

Skills

- Languages ■ Full professional proficiency in Italian (native) and English
Basic command of French and Spanish
- Graphic Software ■ Adobe Illustrator, Corel Draw, Affinity Publisher
- Analog modeling ■ Preparation and handling of different types of analog materials (e.g., gelatin, silicone, glucose syrup, sand); extensive experience with experimental setups for crustal- and lithospheric-scale models, monitoring systems (e.g., high-speed cameras, laser scanner), measuring systems of material properties (e.g., rheometer, densimeter), image analysis techniques (e.g., PIV and PTV)
- Numerical modeling ■ Extensive experience as user with FD and BE methods
- Coding ■ Daily working proficiency with MATLAB
Basic working proficiency with Python, C, C++, GMT, bash, L^AT_EX

October 28, 2023

Date



Signature