

Birth date: December 30, 1973

Married, two beautiful children

Position: Full professor

Institute: Earth Sciences Department (**STU**), UFR des sciences et techniques, Nantes University

Research unit: Laboratory of Planetology and Geodynamics (**LPG**), UMR CNRS-6112

<https://lpg-umr6112.fr/beaucler-e>

eric.beucler@univ-nantes.fr

Abstract

University professor specialising in terrestrial and Martian seismology. Development of inverse methods 1) for imaging planet interiors - seismic tomography at different scales - and 2) for the detection/localisation of low magnitude earthquakes (intraplate). Involved in the French seismological network (RESIF), deployment of broadband seismometers, development of new statistical methods for the continuous seismic signal, seismicity of the Armorican Massif. In the framework of the NASA InSight mission (2018-2022), Co-I of SEIS instrument, seismologist on duty and member of the scientific team. Head of Observatory of Sciences of the Universe Nantes Atlantique since 2021.

Education, honors

1998	Postgraduate degree in Internal Geophysics (Institut de physique du globe de Paris/University Paris 7)
2002	PhD in Seismology (IPGP/University Paris 7)
2004	National prize of Geophysics (CNFGG)
2017	Habilitation à diriger des recherches, Université de Nantes (French diploma)
2020	InSight Science Operations and Enhancement Team NASA award

Special Skills

sciences: seismology, signal processing, numerical methods, geophysics, applied mathematics,

languages: French (native), English (fluent), Madarin Chinese (some notions),

computing: linux, ForTran, bash, *Seismic Analysis Code*, *Generic Mapping Tool*, \LaTeX , python, html.

Work experience

1998-2001	PhD, Department of Seismology, Institut de physique du globe de Paris
2001-2002	Post-doctoral researcher, Department of Seismology, Institut de physique du globe de Paris
2002-2003	Post-doctoral researcher, Earth, Atmosphere and Ocean Department, École normale supérieure de Paris
2003-2004	Post-doctoral researcher, Department of Earth Sciences, Oxford University
2004-2018	Assistant Professor, Nantes University
2018- ...	Full Professor, Nantes University

Publications

- [1] **É. Beucler**, S. Chevrot and J.-P. Montagner (1999), “The Snake River Plain Experiment revisited. Relationships between a Farallon plate fragment and the transition zone”, *Geophys. Res. Lett.*, vol. 26, no. 17, pp. 2673–2676, doi:10.1029/1999GL008345.
- [2] **É. Beucler**, É. Stutzmann and J.-P. Montagner (2003), “Surface-wave higher mode phase velocity measurements using a roller coaster type algorithm”, *Geophys. J. Int.*, vol. 155, pp. 289–307, doi:10.1046/j.1365-246X.2003.02041.x.
- [3] B. Bukchin, T. Yanovskaya, J.-P. Montagner, A. Mostinskiy and **É. Beucler** (2006), “Surface wave focusing effects: Numerical modeling and statistical observations”, *Phys. of the Earth and Planet. Int.*, vol. 155, no. 3, pp. 191–200, doi:10.1016/j.pepi.2005.10.010.
- [4] A. Sebai, E. Stutzmann, J.-P. Montagner, D. Sicilia and **É. Beucler** (2006), “Anisotropic structure of the African upper mantle from Rayleigh and Love wave tomography”, *Phys. of the Earth and Planet. Int.*, vol. 155, no. 1, pp. 48–62, doi:10.1016/j.pepi.2005.09.009.
- [5] **É. Beucler** and J.-P. Montagner (2006), “Computation of Large Anisotropic Seismic Heterogeneities (CLASH)”, *Geophys. J. Int.*, vol. 165, no. 2, pp. 447–468, doi:10.1111/j.1365-246X.2005.02813.x.
- [6] J.-P. Montagner, B. Marty, É. Stutzmann, D. Sicilia, M. Cara, R. Pik, J.-J. Lévêque, G. Roult, **É. Beucler** and É. Debayle (2007), “Mantle upwellings and convective instabilities revealed by seismic tomography and helium isotope geochemistry beneath eastern Africa”, *Geophys. Res. Lett.*, vol. 34, p. L21303, doi:10.1029/2007GL031098.
- [7] D. Sicilia, J.-P. Montagner, M. Cara, É. Stutzmann, É. Debayle, J.-C. Lépine, J.-J. Lévêque, **É. Beucler**, A. Sebai, G. Roult, A. Ayele and J.-M. Sholan (2008), “Upper mantle structure of shear-waves velocities and stratification of anisotropy in the Afar Hotspot region”, *Tectonophysics*, vol. 462, no. 1, pp. 164–177, doi:10.1016/j.tecto.2008.02.016.
- [8] Y. Qin, Y. Capdeville, V. Maupin, J.-P. Montagner, S. Lebedev and **É. Beucler** (2008), “SPICE benchmark for global tomographic methods”, *Geophys. J. Int.*, vol. 175, no. 2, pp. 598–616, doi:10.1111/j.1365-246X.2008.03904.x.
- [9] M. Drilleau, **É. Beucler**, A. Mocquet, O. Verhoeven, G. Moebis, G. Burgos, J.-P. Montagner and P. Vacher (2013), “A Bayesian approach to infer radial models of temperature and anisotropy in the transition zone from surface wave dispersion curves”, *Geophys. J. Int.*, vol. 195, pp. 1165–1183, doi:10.1093/gji/ggt284.
- [10] M. Macquet, A. Paul, H. A. Pedersen, A. Villaseñor, S. Chevrot, M. Sylvander, D. Wolyniec and **Pyrope Working Group** (2014), “Ambient noise tomography of the Pyrenees and the surrounding regions: inversion for a 3-D Vs model in the presence of a very heterogeneous crust”, *Geophys. J. Int.*, vol. 199, no. 1, pp. 402–415, doi:10.1093/gji/ggu270.
- [11] G. Burgos, J.-P. Montagner, **É. Beucler**, Y. Capdeville, A. Mocquet and M. Drilleau (2014), “Oceanic lithosphere-asthenosphere boundary from surface wave dispersion data”, *J. Geophys. Res.: Solid Earth*, vol. 119, no. 2, pp. 1079–1093, doi:10.1002/2013JB010528.
- [12] S. Chevrot, A. Villaseñor, M. Sylvander, S. Benahmed, **É. Beucler**, G. Cougoulat, P. Delmas, M. de Saint Blanquat, J. Diaz, J. Gallart, F. Grimaud, Y. Lagabriele, G. Manatschal, A. Mocquet, H. Pauchet, A. Paul, C. Péquignat, O. Quillard, S. Roussel, M. Ruiz and D. Wolyniec (2014), “High-resolution imaging of the Pyrenees and Massif Central from the data of the PYROPE and IBERARRAY portable array deployments”, *J. Geophys. Res.: Solid Earth*, vol. 119, no. 8, pp. 6399–6420, doi:10.1002/2014JB010953.
- [13] M. Cara, Y. Cansi, A. Schlupp, P. Arroucau, N. Béthoux, **É. Beucler**, S. Bruno, M. Calvet, S. Chevrot, A. Deboissy, B. Delouis, M. Denieul, A. Deschamps, C. Doubre, J. Fréchet, S. Godey, O. Golle, M. Grunberg, J. Guilbert, M. Haugmard, L. Jenatton, S. Lambotte, D. Leobal, C. Maron, V. Mendel, S. Merrer, M. Macquet, A. Mignan, A. Mocquet, M. Nicolas, J. Perrot, B. Potin, O. Sanchez, J.-P. Santoire, O. Sèbe, M. Sylvander, F. Thouvenot, J. Van Der Woerd and K. Van Der Woerd (2015), “SI-Hex: a new catalogue of instrumental seismicity for metropolitan France”, *Bull. Soc. Géol. France*, vol. 186, no. 1, pp. 3–19, doi:10.2113/gssgfbull.186.1.3.
- [14] M. P. Panning, **É. Beucler**, M. Drilleau, A. Mocquet, P. Lognonné and W. B. Banerdt (2015), “Verifying single-station seismic approaches using Earth-based data: Preparation for data return from the InSight mission to Mars”, *Icarus*, vol. 248, pp. 230–242, doi:10.1016/j.icarus.2014.10.035.
- [15] **É. Beucler**, A. Mocquet, M. Schimmel, S. Chevrot, O. Quillard, J. Vergne and M. Sylvander (2015), “Observation of deep water microseisms in the North Atlantic Ocean using tide modulations”, *Geophys. Res. Lett.*, vol. 42, no. 2, pp. 316–322, doi:10.1002/2014GL062347.
- [16] I. Gaudot, **É. Beucler**, A. Mocquet, M. Schimmel and M. Le Feuvre (2016), “Statistical redundancy of instantaneous phases: theory and application to the seismic ambient wavefield”, *Geophys. J. Int.*, vol. 204, no. 2, pp. 1159–1163, doi:10.1093/gji/ggv501.
- [17] M. Bonnin, S. Chevrot, I. Gaudot, M. Haugmard and **Pyrope Working Group** (2017), “Upper-mantle deformation beneath the Pyrenean domain inferred from SKS splitting in northern Spain and southern France”, *Geophys. J. Int.*, vol. 210, no. 2, pp. 898–910, doi:10.1093/gji/ggx193.
- [18] M. P. Panning, P. Lognonné, W. Bruce Banerdt, R. Garcia, M. Golombek, S. Kedar, B. Knapmeyer-Endrun, A. Mocquet, N. A. Teanby, J. Tromp, R. Weber, **É. Beucler**, J.-F. Blanchette-Guertin, E. Bozdağ, M. Drilleau, T. Gudkova, S. Hempel, A. Khan, V. Lekić, N. Murdoch, A.-C. Plesa, A. Rivoldini, N. Schmerr, Y. Ruan,

- O. Verhoeven, C. Gao, U. Christensen, J. Clinton, V. Dehant, D. Giardini, D. Mimoun, W. T. Pike, S. Smrekar, M. Wiczcerek, M. Knapmeyer and J. Wookey (2017), “Planned Products of the Mars Structure Service for the InSight Mission to Mars”, *Space Science Reviews*, vol. 211, no. 1, pp. 611–650, doi:10.1007/s11214-016-0317-5.
- [19] D. Saturnino, B. Langlais, H. Amit, F. Civet, M. Mandaia and **É. Beucler** (2018), “Combining virtual observatory and equivalent source dipole approaches to describe the geomagnetic field with Swarm measurements”, *Phys. of the Earth and Planet. Int.*, vol. 276, pp. 118–133, doi:10.1016/j.pepi.2017.06.004.
- [20] T. Garlan, X. Mathias, E. Brenon, N. Favretto-Cristini, A. Deschamps, **É. Beucler**, P. Guyomard and O. Morio (2018), “Circular Sedimentary Figures of Anthropogenic Origin in a Sediment Stability Context”, *Journal of Coastal Research*, vol. 85, no. sp1, pp. 411 – 415, doi:10.2112/SI85-083.1.
- [21] A. Spiga, D. Banfield, N. A. Teanby, F. Forget, A. Lucas, B. Kenda, J. A. Rodriguez Manfredi, R. Widmer-Schnidrig, N. Murdoch, M. T. Lemmon, R. F. Garcia, L. Martire, Ö. Karatekin, S. Le Maistre, B. Van Hove, V. Dehant, P. Lognonné, N. Mueller, R. Lorenz, D. Mimoun, S. Rodriguez, **É. Beucler**, I. Daubar, M. P. Golombek, T. Bertrand, Y. Nishikawa, E. Millour, L. Rolland, Q. Brissaud, T. Kawamura, A. Mocquet, R. Martin, J. Clinton, É. Stutzmann, T. Spohn, S. Smrekar and W. B. Banerdt (2018), “Atmospheric Science with InSight”, *Space Science Reviews*, vol. 214, no. 7, p. 109, doi:10.1007/s11214-018-0543-0.
- [22] J. Clinton, D. Giardini, M. Böse, S. Ceylan, M. van Driel, F. Euchner, R. F. Garcia, S. Kedar, A. Khan, S. C. Stähler, B. Banerdt, P. Lognonné, **É. Beucler**, I. Daubar, M. Drilleau, M. Golombek, T. Kawamura, M. Knapmeyer, B. Knapmeyer-Endrun, D. Mimoun, A. Mocquet, M. Panning, C. Perrin and N. A. Teanby (2018), “The Marsquake Service: Securing Daily Analysis of SEIS Data and Building the Martian Seismicity Catalogue for InSight”, *Space Science Reviews*, vol. 214, no. 8, p. 133, doi:10.1007/s11214-018-0567-5.
- [23] P. Lognonné, W. B. Banerdt, W. T. Pike, D. Giardini, U. Christensen, R. F. Garcia, T. Kawamura, S. Kedar, B. Knapmeyer-Endrun, L. Margerin, F. Nimmo, M. Panning, B. Tauzin, J.-R. Scholz, D. Antonangeli, S. Barkaoui, **É. Beucler**, F. Bissig, N. Brinkman, M. Calvet, S. Ceylan, C. Charalambous, P. Davis, M. van Driel, M. Drilleau, L. Fayon, R. Joshi, B. Kenda, A. Khan, M. Knapmeyer, V. Lekic, J. McClean, D. Mimoun, N. Murdoch, L. Pan, C. Perrin, B. Pinot, L. Pou, S. Menina, S. Rodriguez, C. Schmelzbach, N. Schmerr, D. Sollberger, A. Spiga, S. Stähler, A. Stott, E. Stutzmann, S. Tharimena, R. Widmer-Schnidrig, F. Andersson, V. Ansan, C. Beghein, M. Böse, E. Bozdag, J. Clinton, I. Daubar, P. Delage, N. Fuji, M. Golombek, M. Grott, A. Horleston, K. Hurst, J. Irving, A. Jacob, J. Knollenberg, S. Krasner, C. Krause, R. Lorenz, C. Michaut, R. Myhill, T. Nissen-Meyer, J. ten Pierick, A.-C. Plesa, C. Quantin-Nataf, J. Robertsson, L. Rochas, M. Schimmel, S. Smrekar, T. Spohn, N. Teanby, J. Tromp, J. Vallade, N. Verdier, C. Vrettos, R. Weber, D. Banfield, E. Barrett, M. Bierwirth, S. Calcutt, N. Compaire, C. L. Johnson, D. Mance, F. Euchner, L. Kerjean, G. Mainsant, A. Mocquet, J. A. Rodriguez Manfredi, G. Pont, P. Laudet, T. Nebut, S. de Raucourt, O. Robert, C. T. Russell, A. Sylvestre-Baron, S. Tillier, T. Warren, M. Wiczcerek, C. Yana and P. Zweifel (2020), “Constraints on the shallow elastic and anelastic structure of Mars from InSight seismic data”, *Nature Geoscience*, vol. 13, no. 3, pp. 213–220, doi:10.1038/s41561-020-0536-y.
- [24] D. Giardini, P. Lognonné, W. B. Banerdt, W. T. Pike, U. Christensen, S. Ceylan, J. F. Clinton, M. van Driel, S. C. Stähler, M. Böse, R. F. Garcia, A. Khan, M. Panning, C. Perrin, D. Banfield, **É. Beucler**, C. Charalambous, F. Euchner, A. Horleston, A. Jacob, T. Kawamura, S. Kedar, G. Mainsant, J.-R. Scholz, S. E. Smrekar, A. Spiga, C. Agard, D. Antonangeli, S. Barkaoui, E. Barrett, P. Combes, V. Conejero, I. Daubar, M. Drilleau, C. Ferrier, T. Gabsi, T. Gudkova, K. Hurst, F. Karakostas, S. King, M. Knapmeyer, B. Knapmeyer-Endrun, R. Llorca-Cejudo, A. Lucas, L. Luno, L. Margerin, J. B. McClean, D. Mimoun, N. Murdoch, F. Nimmo, M. Nonon, C. Pardo, A. Rivoldini, J. A. R. Manfredi, H. Samuel, M. Schimmel, A. E. Stott, E. Stutzmann, N. Teanby, T. Warren, R. C. Weber, M. Wiczcerek and C. Yana (2020), “The seismicity of Mars”, *Nature Geoscience*, vol. 13, no. 3, pp. 205–212, doi:10.1038/s41561-020-0539-8.
- [25] D. Banfield, A. Spiga, C. Newman, F. Forget, M. Lemmon, R. Lorenz, N. Murdoch, D. Viudez-Moreiras, J. Pla-Garcia, R. F. Garcia, P. Lognonné, Ö. Karatekin, C. Perrin, L. Martire, N. Teanby, B. V. Hove, J. N. Maki, B. Kenda, N. T. Mueller, S. Rodriguez, T. Kawamura, J. B. McClean, A. E. Stott, C. Charalambous, E. Millour, C. L. Johnson, A. Mittelholz, A. Määttänen, S. R. Lewis, J. Clinton, S. C. Stähler, S. Ceylan, D. Giardini, T. Warren, W. T. Pike, I. Daubar, M. Golombek, L. Rolland, R. Widmer-Schnidrig, D. Mimoun, **É. Beucler**, A. Jacob, A. Lucas, M. Baker, V. Ansan, K. Hurst, L. Mora-Sotomayor, S. Navarro, J. Torres, A. Lepinette, A. Molina, M. Marin-Jimenez, J. Gomez-Elvira, V. Peinado, J.-A. Rodriguez-Manfredi, B. T. Carcich, S. Sackett, C. T. Russell, T. Spohn, S. E. Smrekar and W. B. Banerdt (2020), “The atmosphere of Mars as observed by InSight”, *Nature Geoscience*, vol. 13, no. 3, pp. 190–198, doi:10.1038/s41561-020-0534-0.
- [26] M. Drilleau, **É. Beucler**, P. Lognonné, M. P. Panning, B. Knapmeyer-Endrun, W. B. Banerdt, C. Beghein, S. Ceylan, M. van Driel, R. Joshi, T. Kawamura, A. Khan, S. Menina, A. Rivoldini, H. Samuel, S. Stähler, H. Xu, M. Bonnin, J. Clinton, D. Giardini, B. Kenda, V. Lekic, A. Mocquet, N. Murdoch, M. Schimmel, S. E. Smrekar, É. Stutzmann, B. Tauzin and S. Tharimena (2020), “MSS/1: Single-Station and Single-Event Marsquake Inversion”, *Earth and Space Science*, vol. 7, no. 12, p. e2020EA001118, doi:10.1029/2020EA001118.
- [27] J. F. Clinton, S. Ceylan, M. van Driel, D. Giardini, S. C. Stähler, M. Böse, C. Charalambous, N. L. Dahmen, A. Horleston, T. Kawamura, A. Khan, G. Orhand-Mainsant, J.-R. Scholz, F. Euchner, W. B. Banerdt, P. Lognonné, D. Banfield, **É. Beucler**, R. F. Garcia, S. Kedar, M. P. Panning, C. Perrin, W. T. Pike, S. E. Smrekar, A. Spiga and

- A. E. Stott (2021), “The Marsquake catalogue from InSight, sols 0–478”, *Phys. of the Earth and Planet. Int.*, vol. 310, p. 106595, doi:10.1016/j.pepi.2020.106595.
- [28] S. Ceylan, J. F. Clinton, D. Giardini, M. Böse, C. Charalambous, M. van Driel, A. Horleston, T. Kawamura, A. Khan, G. Orhand-Mainsant, J.-R. Scholz, S. C. Stähler, F. Euchner, W. B. Banerdt, P. Lognonné, D. Banfield, **É. Beucler**, R. F. Garcia, S. Kedar, M. P. Panning, W. T. Pike, S. E. Smrekar, A. Spiga, N. L. Dahmen, K. Hurst, A. E. Stott, R. D. Lorenz, M. Schimmel, E. Stutzmann, J. ten Pierick, V. Conejero, C. Pardo and C. Perrin (2021), “Companion guide to the marsquake catalog from InSight, Sols 0–478: Data content and non-seismic events”, *Phys. of the Earth and Planet. Int.*, vol. 310, p. 106597, doi:10.1016/j.pepi.2020.106597.
- [29] J.-R. Scholz, R. Widmer-Schmidrig, P. Davis, P. Lognonné, B. Pinot, R. F. Garcia, K. Hurst, L. Pou, F. Nimmo, S. Barkaoui, S. de Raucourt, B. Knapmeyer-Endrun, M. Knapmeyer, G. Orhand-Mainsant, N. Compaire, A. Cuvier, **É. Beucler**, M. Bonnin, R. Joshi, G. Sainton, E. Stutzmann, M. Schimmel, A. Horleston, M. Böse, S. Ceylan, J. Clinton, M. van Driel, T. Kawamura, A. Khan, S. C. Stähler, D. Giardini, C. Charalambous, A. E. Stott, W. T. Pike, U. R. Christensen and W. B. Banerdt (2020), “Detection, Analysis, and Removal of Glitches From InSight’s Seismic Data From Mars”, *Earth and Space Science*, vol. 7, no. 11, p. e2020EA001317, doi:10.1029/2020EA001317.
- [30] N. Brinkman, S. C. Stähler, D. Giardini, C. Schmelzbach, A. Khan, A. Jacob, N. Fuji, C. Perrin, P. Lognonné, **É. Beucler**, M. Böse, S. Ceylan, C. Charalambous, J. F. Clinton, M. van Driel, F. Euchner, A. Horleston, T. Kawamura, B. Knapmeyer-Endrun, G. Mainsant, M. P. Panning, W. T. Pike, J.-R. Scholz, J. O. A. Robertsson and W. B. Banerdt (2021), “First Focal Mechanisms of Marsquakes”, *J. Geophys. Res.: Planets*, vol. 126, no. 4, p. e2020JE006546, doi:10.1029/2020JE006546.
- [31] I. Gaudot, **É. Beucler**, A. Mocquet, M. Drilleau, M. Haugmard, M. Bonnin, G. Aertgeerts and D. Leparoux (2021), “3-D crustal VS model of western France and the surrounding regions using Monte Carlo inversion of seismic noise cross-correlation dispersion diagrams”, *Geophys. J. Int.*, vol. 224, no. 3, pp. 2173–2188, doi:10.1093/gji/ggaa552.
- [32] S. C. Stähler, A. Khan, W. B. Banerdt, P. Lognonné, D. Giardini, S. Ceylan, M. Drilleau, A. C. Duran, R. F. Garcia, Q. Huang, D. Kim, V. Lekic, H. Samuel, M. Schimmel, N. Schmerr, D. Sollberger, Éléonore Stutzmann, Z. Xu, D. Antonangeli, C. Charalambous, P. M. Davis, J. C. E. Irving, T. Kawamura, M. Knapmeyer, R. Maguire, A. G. Marusiak, M. P. Panning, C. Perrin, A.-C. Plesa, A. Rivoldini, C. Schmelzbach, G. Zenhäusern, **É. Beucler**, J. Clinton, N. Dahmen, M. van Driel, T. Gudkova, A. Horleston, W. T. Pike, M. Plasman and S. E. Smrekar (2021), “Seismic detection of the martian core”, *Science*, vol. 373, no. 6553, pp. 443–448, doi:10.1126/science.abi7730.
- [33] P. Moulík, V. Lekic, B. Romanowicz, Z. Ma, A. Schaeffer, T. Ho, **É. Beucler**, E. Debayle, A. Deuss, S. Durand, G. Ekström, S. Lebedev, G. Masters, K. Priestley, J. Ritsema, K. Sigloch, J. Trampert and A. M. Dziewonski (10 2021), “Global reference seismological datasets: Multi-mode surface wave dispersion”, *Geophys. J. Int.*, doi:10.1093/gji/ggab418.
- [34] J.-P. Montagner, G. Burgos, Y. Capdeville, **É. Beucler** and A. Mocquet (2021), “The mantle transition zone dynamics as revealed through seismic anisotropy”, *Tectonophysics*, p. 229133, doi:10.1016/j.tecto.2021.229133.
- [35] **É. Beucler**, M. Bonnin, C. Hourcade, B. Van Vliet-Lanoë, C. Perrin, L. Provost, A. Mocquet, J. Battaglia, L. Geoffroy, P. Steer, B. L. Gall, J.-M. Douchain, D. Fligiel, P. Gernigon, B. Delouis, J. Perrot, S. Mazzotti, G. Mazet-Roux, S. Lambotte, M. Grunberg, J. Vergne, C. Clément, É. Calais, J. Deverchère, L. Longuevergne, A. Duperré, C. Roques, T. Kaci and C. Authemayou (2021), “Characteristics and possible origins of the seismicity in northwestern France”, *C. R. Geoscience*, doi:10.5802/crgeos.86.
- [36] N. Favretto-Cristini, F. Wang, P. Cristini, T. Garlan, O. Morio, E. D. Mercerat, V. Monteiller, A. Deschamps and **É. Beucler** (2022), “Assessment of Risks Induced by Countermining Unexploded Large-Charge Historical Ordnance in a Shallow Water Environment—Part II: Modeling of Seismo-Acoustic Wave Propagation”, *IEEE Journal of Oceanic Engineering*, vol. 47, no. 2, pp. 374–398, doi:10.1109/joe.2021.3111791.
- [37] N. Favretto-Cristini, T. Garlan, O. Morio, X. Demoulin, M. Arrigoni, A. Deschamps, M. Bonnin, **É. Beucler**, E. D. Mercerat, D. Ambrois, R. Schwab, P. Cristini and F. Wang (2022), “Assessment of Risks Induced by Countermining Unexploded Large-Charge Historical Ordnance in a Shallow Water Environment—Part I: Real Case Study”, *IEEE Journal of Oceanic Engineering*, vol. 47, no. 2, pp. 350–373, doi:10.1109/joe.2021.3111819.
- [38] A. C. Horleston, J. F. Clinton, S. Ceylan, D. Giardini, C. Charalambous, J. C. E. Irving, P. Lognonné, S. C. Stähler, G. Zenhäusern, N. L. Dahmen, C. Duran, T. Kawamura, A. Khan, D. Kim, M. Plasman, F. Euchner, C. Beghein, **É. Beucler**, Q. Huang, M. Knapmeyer, B. Knapmeyer-Endrun, V. Lekic, J. Li, C. Perrin, M. Schimmel, N. C. Schmerr, A. E. Stott, E. Stutzmann, N. A. Teanby, Z. Xu, M. Panning and W. B. Banerdt (2022), “The Far Side of Mars: Two Distant Marsquakes Detected by InSight”, *The Seismic Record*, vol. 2, no. 2, pp. 88–99, doi:10.1785/0320220007.
- [39] R. F. Garcia, I. J. Daubar, **É. Beucler**, L. V. Posiolova, G. S. Collins, P. Lognonné, L. Rolland, Z. Xu, N. Wójcicka, A. Spiga, B. Fernando, G. Speth, L. Martire, A. Rajšić, K. Miljković, E. K. Sansom, C. Charalambous, S. Ceylan, S. Menina, L. Margerin, R. Lapeyre, T. Neidhart, N. A. Teanby, N. C. Schmerr, M. Bonnin, M. Froment, J. F. Clinton, O. Karatekin, S. C. Stähler, N. L. Dahmen, C. Durán, A. Horleston, T. Kawamura, M. Plasman, G. Zenhäusern, D. Giardini, M. Panning, M. Malin and W. B. Banerdt (Sep 2022), “Newly formed craters on Mars located using seismic and acoustic wave data from InSight”, *Nature Geoscience*, doi:10.1038/s41561-022-01014-0.
- [40] Z. Xu, M. Froment, R. F. Garcia, **É. Beucler**, K. Onodera, T. Kawamura, P. Lognonné and W. B. Banerdt (2022), “Modeling Seismic Recordings of High-Frequency Guided Infrasound on Mars”, *J. Geophys. Res.: Planets*, vol. 127, no. 11, p. e2022JE007483, doi:10.1029/2022JE007483.

- [41] L. V. Posiolova, P. Lognonné, W. B. Banerdt, J. Clinton, G. S. Collins, T. Kawamura, S. Ceylan, I. J. Daubar, B. Fernando, M. Froment, D. Giardini, M. C. Malin, K. Miljković, S. C. Stähler, Z. Xu, M. E. Banks, **É. Beucler**, B. A. Cantor, C. Charalambous, N. Dahmen, P. Davis, M. Drilleau, C. M. Dundas, C. Durán, F. Euchner, R. F. Garcia, M. Golombek, A. Horleston, C. Keegan, A. Khan, D. Kim, C. Larmat, R. Lorenz, L. Margerin, S. Menina, M. Panning, C. Pardo, C. Perrin, W. T. Pike, M. Plasman, A. Rajšić, L. Rolland, E. Rougier, G. Speth, A. Spiga, A. Stott, D. Susko, N. A. Teanby, A. Valeh, A. Werynski, N. Wójcicka and G. Zenhäusern (2022), “Largest recent impact craters on Mars: Orbital imaging and surface seismic co-investigation”, *Science*, vol. 378, no. 6618, pp. 412–417, doi:10.1126/science.abq7704.
- [42] D. Kim, W. B. Banerdt, S. Ceylan, D. Giardini, V. Lekić, P. Lognonné, C. Beghein, **É. Beucler**, S. Carrasco, C. Charalambous, J. Clinton, M. Drilleau, C. Durán, M. Golombek, R. Joshi, A. Khan, B. Knapmeyer-Endrun, J. Li, R. Maguire, W. T. Pike, H. Samuel, M. Schimmel, N. C. Schmerr, S. C. Stähler, E. Stutzmann, M. Wieczorek, Z. Xu, A. Batov, E. Bozdog, N. Dahmen, P. Davis, T. Gudkova, A. Horleston, Q. Huang, T. Kawamura, S. D. King, S. M. McLennan, F. Nimmo, M. Plasman, A. C. Plesa, I. E. Stepanova, E. Weidner, G. Zenhäusern, I. J. Daubar, B. Fernando, R. F. Garcia, L. V. Posiolova and M. P. Panning (2022), “Surface waves and crustal structure on Mars”, *Science*, vol. 378, no. 6618, pp. 417–421, doi:10.1126/science.abq7157.
- [43] M. Bonnin, E. D. Mercierat, **É. Beucler**, N. Favretto-Cristini, A. Deschamps, D. Ambrois and T. Garlan (2022), “Short-Range Recordings of Shallow Underwater Explosions with Short-Period and Broadband Seismometers in the Bay of Hyères, France”, *Bull. Seismol. Soc. Am.*, doi:10.1785/0120220141.
- [44] C. Hourcade, M. Bonnin and **É. Beucler** (2022), “New CNN-based tool to discriminate anthropogenic from natural low magnitude seismic events”, *Geophys. J. Int.*, vol. 232, no. 3, pp. 2119–2132, doi:10.1093/gji/ggac441.
- [45] N. Verdier, V. Ansan, P. Delage, K. S. Ali, **É. Beucler**, C. Charalambous, E. Constant, A. Spiga, M. Golombek, E. Marteau, R. Lapeyre, E. Gaudin, C. Yana, K. Hurst, P. Lognonné and B. W. Banerdt (2023), “Using Wind Dispersion Effects During the InSight Tether Burial Activities to Better Constrain the Regolith Grain Size Distribution”, *J. Geophys. Res.: Planets*, vol. 128, no. 5, p. e2022JE007707, doi:https://doi.org/10.1029/2022JE007707.

International communications (selection)

- [1] **É. Beucler**, É. Stutzmann and J.-P. Montagner (Dec. 2000), “Global Phase Velocity Tomography of Higher Modes”, in *AGU Fall Meet. Abstracts*.
- [2] **É. Beucler**, L. Guillot, É. Stutzmann, J. Montagner, G. Roullet and É. Clévédy (Dec. 2002), “Robust Computation of Global Surface Wave Phase Velocity Maps from Massive Dataset by the Clash”, in *AGU Fall Meet. Abstracts*.
- [3] **É. Beucler** and J. P. Montagner (Apr. 2003), “The CLASH: a new approach to realize phase velocity maps”, in *EGS - AGU - EUG Joint Assembly*.
- [4] **É. Beucler** and J. H. Woodhouse (July 2004), “Seismic investigation of the lithosphere: old and new observations”, in *9th Symposium in the Study of the Earth’s Deep Interior (SEDI)*.
- [5] J. Montagner, E. Stutzmann, **É. Beucler**, D. Sicilia and A. Sebai (Dec. 2004), “Global Model of Seismic Anisotropy and Geodynamics”, in *AGU Fall Meet. Abstracts*.
- [6] **É. Beucler** (July 2006), “Least-squares criterion: variations on a theme”, in *SPICE Workshop*. (invited).
- [7] M. Drilleau, **É. Beucler**, A. Mocquet and O. Verhoeven (May 2010), “Bayesian approach to infer temperature and mineralogical composition of the TZ from seismic waveforms”, in *EGU General Assembly Conference Abstracts*, vol. 12.
- [8] **É. Beucler**, Y. Capdeville, A. Fournier and T. Nissen-Meyer (Dec. 2010), “Impact of deep mantle structural heterogeneities on core-diffracted traveltimes: constraints on full-wave Born sensitivity kernel tomography”, in *AGU Fall Meet. Abstracts*.
- [9] M. Drilleau, **É. Beucler**, A. Mocquet, O. Verhoeven, G. Burgos, Y. Capdeville and J.-P. Montagner (Dec. 2011), “One dimensional models of temperature and composition in the transition zone from a bayesian inversion of surface waves”, in *AGU Fall Meet. Abstracts*.
- [10] M. P. Panning, A. Mocquet, **É. Beucler**, W. B. Banerdt, P. Lognonné, L. Boschi, C. Johnson and R. C. Weber (Mar. 2012), “InSight: Using Earth Data to Demonstrate Inversion Techniques for Mars’ Interior”, in *Lunar and Planetary Institute Science Conference Abstracts*, vol. 43 of *Lunar and Planetary Inst. Technical Report*, p. 1515.
- [11] G. Burgos, J.-P. Montagner, **É. Beucler**, J. Trampert, M. H. Ritzwoller, Y. Capdeville and N. M. Shapiro (Apr. 2012), “Lithosphere/Asthenosphere Boundary depth inferred from global surface wave tomography”, in *EGU General Assembly Conference Abstracts*, vol. 14.
- [12] M. Drilleau, **É. Beucler**, A. Mocquet, O. Verhoeven, G., G. Burgos and J. Montagner (July 2012), “A Bayesian approach to infer temperature in the transition zone from surface waves”, in *13th Symposium on Study of the Earth’s Deep Interior*, 13th Symposium on Study of the Earth’s Deep Interior.

- [13] M. P. Panning, A. Mocquet, **É. Beucler**, M. Drilleau, B. Banerdt and P. Lognonne (Dec. 2012), “Demonstrating Single Seismic Station Approaches to Modeling Martian Interior Using Earth Data”, in *AGU Fall Meet. Abstracts*.
- [14] M. P. Panning, **É. Beucler**, A. Mocquet, M. Drilleau, P. H. Lognonné and W. B. Banerdt (Dec. 2013), “Testing the ability of the INSIGHT-SEIS experiment to model Mars deep interior”, in *AGU Fall Meet. Abstracts*.
- [15] M. Drilleau, **É. Beucler**, A. Mocquet, O. Verhoeven, G. Moebs, G. Burgos and J. Montagner (Dec. 2013), “A Bayesian approach to infer the radial distribution of temperature and anisotropy in the transition zone from seismic data”, in *AGU Fall Meet. Abstracts*.
- [16] I. Gaudot, **É. Beucler**, A. Mocquet, M. Drilleau and M. Le Feuvre (Dec. 2015), “Non-linear Inversion of Noise Cross-correlations Using Probability Density Functions of Surface Waves Dispersion”, in *AGU Fall Meet. Abstracts*.
- [17] **É. Beucler**, A. Mocquet, M. Schimmel, S. Chevrot, J. Vergne and M. Sylvander (Dec. 2015), “Discrimination of Secondary Microseism Origins Using Ocean Tide Modulation”, in *AGU Fall Meet. Abstracts*.
- [18] M. Haugmard, **É. Beucler** and A. Mocquet (Dec. 2015), “Probabilistic Hypocenter-Velocity Determination for Moderate Local Earthquakes Using a Sparse Network”, in *AGU Fall Meet. Abstracts*.
- [19] **É. Beucler**, I. Gaudot, M. Drilleau, A. Mocquet and P. Lognonné (June 2016), “Non-linear inversion of probability density functions of surface wave dispersion”, in *Conference on Mathematical Geophysics*.
- [20] M. Bonnin, B. Manhaval, D. Fligiel, **É. Beucler** and J. Vergne (Dec. 2016), “Feedback on the Installation of a Borehole Broadband Seismometer at Station BOUF, French Permanent Broadband Network”, in *AGU Fall Meet. Abstracts*.
- [21] M. Haugmard, **É. Beucler** and A. Mocquet (Dec. 2016), “Joint probabilistic determination of earthquake location and velocity structure: application to local and regional events”, in *AGU Fall Meet. Abstracts*.
- [22] I. Gaudot, **É. Beucler**, A. Mocquet, M. Schimmel and M. Le Feuvre (Dec. 2016), “Introducing the Statistical Redundancy of Instantaneous Phases of the Seismic Signal to Isolate Persistent Sources”, in *AGU Fall Meet. Abstracts*.