

**Bibliometrical data:** 89 peer-reviewed articles  
 (October 2024) total number of citation (WoS): 4000+  
 h-index: 35 (WoS)  
 5 highly cited papers (WoS)  
 5 papers cited 200+ times; 12 papers cited 100+ times; 24 papers cited 50+ times  
 2 chapters in research monographs

among my articles: 4 Science, 1 Nature, 1 Nature Comm., 3 Nature Geosci., 5 PNAS, 5 Phys. Rev. Lett., 4 Geophys. Res. Lett., 12 Earth Planet. Sci. Lett., 1 Geochim. Cosmochim. Acta, 3 Sci. Rep., 3 J. Geophys. Res. – Planets, 6 J. Geophys. Res. - Solid Earth, 2 Phys. Rev. Materials, 12 Phys. Rev. B, 3 Appl. Phys. Lett.

## Publications in peer review journals

- 89) “*New opportunities for high-pressure science at the extremely brilliant source of the ESRF and the energy scanning X-ray absorption beamlines ID24-DCM and BM23*”, D. Rosa, G. Garbarino, J.E. Rodrigues, E. Mijit, J. Jacobs, D. Bugnazet, S. Pasternak, G. Berruyer, A. Moyne, C. Clavel, F. Perrin, S. Anzellini, C. Meneghini, F. Occelli, P. Loubeyre, X. Zhan, N. Ishimatsu, T. Sakai, S. Boccato, R. Torchio, J.-A. Hernandez, C. Heat, S. Dominijanni, G. Morard, D. Antonangeli, S. Petittdemange, B. Wehinger, M. Mezouar, G. Kovalskii, M. Wilke, A. DiCicco, M. A. Bouhifd, T. Irifune, K. Lomachenko, O. Mathon, High Press. Res. 44, 248 (2024).
- 88) “*Phase diagram and thermo-elastic properties of Fe-S compounds up to 15 GPa: thermodynamic constraints on the core of medium-sized telluric planets*”, B. Zhao, G. Morard, S. Boccato, M. Mezouar, D. Antonangeli, Earth Planet. Sci. Lett. 634, 118676 (2024).
- 87) “*Melting line and thermal equation of state of fcc-cobalt: a combined experimental and computational approach*”, S. Anzellini, S. Boccato, S.R. Baty, L. Burakovsky, D. Antonangeli, D. Errandonea, R. Torchio, Results in Physics 56, 107218 (2023).
- 86) “*Thermal equation of state of Fe<sub>3</sub>O<sub>4</sub> magnetite up to 16 GPa and 1100 K*”, N.C. Siersch, G. Criniti, A. Kurnosov, K. Glazyrin, D. Antonangeli, Am. Mineral. 108, 1322 (2023).
- 85) “*Spin state and deep interior structure of Mars from InSight radio tracking*”, S. Le Maistre, A. Rivoldini, A. Caldiero, M. Yseboodt, R.-M. Baland, M. Beuthe, T. Van Hoolst, V. Dehant, W.M. Folkner, D. Buccino, D. Kahan, J.-C. Marty, D. Antonangeli, J. Badro, M. Drilleau, A. Konopliv, M.-J. Péters, A.-C. Plesa, H. Samuel, N. Tosi, M. Wieczorek, P. Lognonné, M. Panning, S. Smrekar, W.B. Banerdt, Nature 619, 733 (2023).
- 84) “*First observations of core-transiting seismic phases on Mars*”, J.C.E. Irving, V. Lekić, C. Durán, M. Drilleau, D. Kim, A. Rivoldini, A. Khan, H. Samuel, D. Antonangeli, W.B. Banerdt, C. Beghein, E. Bozdog, S. Ceylan, C. Charalambous, J. Clinton, P. Davisi, R. Garcia, D. Giardini, A. Horleston, Q. Huang, K.J. Hurst, T. Kawamura, S.D. King, M. Knapmeyer, J. Li, P. Lognonné, R. Maguire, M.P. Panning, A.-C. Plesa, M. Schimmel, N.C. Schmerr, S.C. Stähler, E. Stutzmann, Z. Xu, PNAS 120, e2217090120 (2023).
- 83) “*Composition-dependent thermal equation of state of B2 Fe-Si alloys at high pressure*” S. Yokoo, E. Edmund, G. Morard, M. Baron, S. Boccato, F. Decremps, K. Hirose, A. Pakhomova, D. Antonangeli, Am. Mineral. 108, 536 (2023).
- 82) “*Local structure and density of liquid Fe-C-S alloys at Moon’s core conditions*”, B. Zhao, G. Morard, E. Boulard, S. Boccato, N.C. Siersch, A. Rivoldini, N. Guignot, L. Henry, A. King, C. Zurkowski, Y. Fei, D. Antonangeli, J. Geophys. Res. – Planet 128, e2022JE007577 (2023).
- 81) “*Structural and electronic transitions in liquid FeO under high pressure*”, G. Morard, D. Antonangeli, J. Bouchet, A. Rivoldini, S. Boccato, F. Miozzi, E. Boulard, H. Bureau, M. Mezouar, C. Prescher, S. Chariton, E. Greenberg, J. Geophys. Res. – Solid Earth 127, e2022JB025117 (2022).
- 80) “*Seismic detection of a deep mantle discontinuity within Mars by InSight*”, Q. Huang, N.C. Schmerr, S.D. King, D. Kim, A. Rivoldini, A.-C. Plesa, H. Samuel, R.R. Maguire, F. Karakostas, V. Lekić, C. Charalambous, M. Collinet, R. Myhill, D. Antonangeli, M. Drilleau, M. Bystricky, C. Bollinger, C. Michaut, T. Gudkova, J.C.E. Irving, A. Horleston, B. Fernando, K. Leng, T. Nissen-Meyer, F. Bejina, E. Bozdog, C. Beghein, L. Waszek, N.C. Siersch, J.-R. Scholz, P.M. Davis, P. Lognonné, B. Pinot, R. Widmer-Schmidrig, M.P. Panning, S.E. Smrekar, T. Spohn, W.T. Pike, D. Giardini, W. Bruce Banerdt, PNAS 119, e2204474119 (2022).
- 79) “*Sound velocities and thermodynamical properties of hcp iron at high pressure and temperature*”, J. Bouchet, F. Bottin, D. Antonangeli, G. Morard, Journal of Physics: Condensed Matter 34, 344002 (2022).
- 78) “*X-ray diffraction study on phase transformation dynamics of iron and Fe-Si alloys along the shock Hugoniot using an x-ray free electron laser*”, A. Krygier, M. Harmand, B. Albertazzi, E.E. McBride, K. Miyanishi, D. Antonangeli, Y. Inubushi, R. Kodama, M. Koenig, T. Matsuoka, G. Moggi, F. Pietrucci, A.M. Saitta, T.

- Togashi, Y. Umeda, T. Vinci, M. Yabashi, T. Yabuuchi, G. Fiquet, N. Ozaki, *Phys. Rev. B* 05, L220102 (2022).
- 77) “*InSight constraints on the global character of the Martian crust*”, M.A. Wieczorek, A. Broquet, S.M. McLennan, A. Rivoldini, M. Golombek, D. Antonangeli, C. Beghein, D. Giardini, T. Gudkova, S. Gyalay, C.L. Johnson, R. Joshi, D. Kim, S.D. King, B. Knapmeyer-Endrun, P. Lognonnée, C. Michaut, A. Mittelholz, F. Nimmo, L. Ojha, M.P. Panning, A.-C. Plesa, M.A. Siegler, S.E. Smrekar, T. Spohn, W.B. Banerdt, *J. Geophys. Res. – Planet* 127, e2022JE007298 (2022).
- 76) “*Determination of indium melting curve at high pressure by picosecond acoustics*”, S. Ayrinhac, M. Gauthier, M. Morand, Y. Garino, S. Boccato, F. Decremps, P. Parisiades, P. Rosier, N.C. Siersch, A. Seghour, D. Antonangeli, *Phys. Rev. Materials* 6, 063403 (2022).
- 75) “*Picosecond acoustics: a new way to access elastic properties of materials at pressure and temperature conditions of planetary interiors*”, S. Boccato, M. Gauthier, N.C. Siersch, P. Parisiades, Y. Garino, S. Ayrinhac, S. Balugani, C. Bretonnet, T. Deletang, M. Guillot, K. Verbeke, F. Decremps, Y. Guarnelli, M. Morand, P. Rosier, B. Zhao, D. Antonangeli, *Phys. Chem. Min.* 49, 20 (2022).
- 74) “*The interaction between the SEIS seismometer of the InSight Martian mission and a regolith simulant*”, P. Delage, J.P. Castillo-Betancourt, B. Caicedo-Hormaza, F. Karakostas, E. De Laure, P. Lognonné, D. Antonangeli, B. Banerdt, *Géotechnique*, 0:0, 1-12, doi: 10.1680/jgeot.21.00171 (2022).
- 73) “*The Fe-Si-C system at extreme P-T conditions: a possible core crystallization pathway for reduced planets*”, F. Miozzi, G. Morard, D. Antonangeli, A. N. Clark, M. A. Baron, A. Pakhomova, M. Mezouar, G. Fiquet, *Geochim. Cosmochim. Acta* 322, 129 (2022).
- 72) “*Amorpheus: a python-based software for the treatment of x-ray scattering data of amorphous and liquid systems*”, S. Boccato, Y. Garino, G. Morard, B. Zhao, F. Xu, C. Sanloup, A. King, N. Guignot, A. Clark, G. Garbarino, M. Morand, D. Antonangeli, *High Press. Res.* 42, 69 (2022).
- 71) “*The Fe-FeSi Phase Diagram at Mercury’s Core Conditions*”, E. Edmund, G. Morard, M. Baron, A. Rivoldini, S. Yokoo, S. Boccato, K. Hirose, A. Pakhomova, D. Antonangeli, *Nature Comm.* 13, 387 (2022).
- 70) “*Low Velocity Zones in the Martian Upper Mantle Highlighted by Sound Velocity Measurements*”, F. Xu, N.C. Siersch, S. Gréaux, A. Rivoldini, H. Kuwahara, N. Kondo, N. Wehr, N. Menguy, Y. Kono, Y. Higo, A.-C. Plesa, J. Badro, D. Antonangeli, *Geophys. Res. Lett.* 48, e2021GL093977 (2021).
- 69) “*Seismic detection of the martian core*”, 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, É. 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, S.E. Smrekar, *Science* 373, 443 (2021).
- 68) “*Thickness and structure of the Martian crust from InSight seismic data*”, B. Knapmeyer-Endrun, M.P. Panning, F. Bissig, R. Joshi, A. Khan, D. Kim, V. Lekić, B. Tauzin, S. Tharimena, M. Plasman, N. Compaire, R.F. Garcia, L. Margerin, M. Schimmel, É. Stutzmann, N. Schmerr, E. Bozdağ, A.-C. Plesa, M.A. Wieczorek, A. Broquet, D. Antonangeli, S.M. McLennan, H. Samuel, C. Michaut, L. Pan, S.E. Smrekar, C.L. Johnson, N. Brinkman, A. Mittelholz, A. Rivoldini, P.M. Davis, P. Lognonné, B. Pinot, J.-R. Scholz, S. Stähler, M. Knapmeyer, M. van Driel, D. Giardini, W.B. Banerdt, *Science* 373, 438 (2021).
- 67) “*Thermal expansion of liquid Fe-S alloy at high pressure*”, F. Xu, G. Morard, N. Guignot, A. Rivoldini, G. Manthilake, J.Chantel, L. Xie, A. Yoneda, A. King, E. Boulard, S. Pandolfi, F.J. Ryerson, D. Antonangeli, *Earth Planet. Sci. Lett.* 563, 116884 (2021).
- 66) “*High-pressure deformation of iron–nickel–silicon alloys and implications for Earth’s inner core*”, M.C. Brennan, R.A. Fischer, S. Couper, L. Miyagi, D. Antonangeli, G. Morard, *J. Geophys. Res. - Solid Earth* 126, e2020JB021077 (2021).
- 65) “*Limits of quasi-harmonic approximation in MgO: Volume dependence of optical modes investigated by infrared reflectivity and ab initio calculations*”, E. Calandrini, L. Paulatto, D. Antonangeli, F. He, R.P.S.M. Lobo, F. Capitani, J.-B. Brubach, P. Roy, L. Vincent, P. Giura, *Phys. Rev. B* 103, 054302 (2021).
- 64) “*High-pressure transformations in liquid rubidium*”, S. Ayrinhac, V. Naden Robinson, F. Decremps, M. Gauthier, D. Antonangeli, S. Scandolo, M. Morand, *Phys. Rev. Materials* 4, 113611 (2020).
- 63) “*Equation of state of hcp Fe-C-Si alloys and the effect of C incorporation mechanism on the density of hcp Fe at 300 K*”, M.G. Pamato, Y. Li, D. Antonangeli, F. Miozzi, G. Morard, I.G. Wood, L. Vočadlo, J.P. Brodholt, M. Mezouar, *J. Geophys. Res. - Solid Earth* 125, <https://doi.org/10.1029/2020JB020159> (2020).
- 62) “*Melting properties by x-ray absorption spectroscopy: common signatures in binary Fe-C, Fe-O, Fe-S and Fe-Si systems*”, S. Boccato, R. Torchio, S. Anzellini, E. Boulard, F. Guyot, T. Irifune, M. Harmand, I. Kantor, F. Miozzi, P. Parisiades, A.D. Rosa, D. Antonangeli, G. Morard, *Sci. Rep.* 10, 11663 (2020).
- 61) “*Eutectic melting of Fe-3at% Si-4at% C up to 200 GPa and implications for the Earth’s core*” F. Miozzi, G.

- Morard, D. Antonangeli, M.A. Baron, S. Boccato, A. Pakhomova, G. Garbarino, M. Mezouar, G. Fiquet, *Earth Planet. Sci. Lett.* 544, 116382 (2020).
- 60) “*Subsurface structure at the InSight landing site from compliance measurements by seismic and meteorological experiments*” B. Kenda, M. Drilleau, R. F. Garcia, T. Kawamura, N. Murdoch, N. Compaire, P. Lognonné, A. Spiga, R. Widmer-Schmidrig, P. Delage, V. Ansan, C. Vrettos, S. Rodriguez, W. B. Banerdt, D. Banfield, D. Antonangeli, U. Christensen, D. Mimoun, A. Mocquet, T. Spohn, *J. Geophys. Res. – Planets* 125, <https://doi.org/10.1029/2020JE006387> (2020).
- 59) “*Boron-MgO composite as an X-ray transparent pressure medium in the multi-anvil apparatus*” L. Xie, A. Yoneda, F. Xu, Y. Higo, C. Wang, Y. Tange, A. King, D. Antonangeli, G. Morard, N. Guignot, *Rev. Sci. Instrum* 91, 043903 (2020).
- 58) “*TiC-MgO composite: An X-ray transparent and machinable heating element in a multi-anvil high pressure apparatus*” F. Xu, L. Xie, A. Yoneda, N. Guignot, A. King, G. Morard, D. Antonangeli, *High Press. Res.* (2020) DOI : 10.1080/08957959.2020.1747452.
- 57) “*Picosecond acoustics technique to measure the sound velocities of Fe-Si alloys and Si single-crystals at high pressure*” E. Edmund, M. Gauthier, D. Antonangeli, S. Ayrinhac, S. Boccato, T. Deletang, M. Morand, Y. Garino, P. Parisiades, F. Decremps, *Minerals* 10, 214 (2020).
- 56) “*Constraints on the shallow elastic and anelastic structure of Mars from InSight seismic data*” 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, E. 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-Schmidrig, F. Andersson, V. Ansan, C. Beghein, M. Böse, E. Bozdogan, 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, B. 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. Johnson, D. Mance, F. Euchner, L. Kerjean, G. Mainsant, A. Mocquet, J.A. Rodriguez Manfredi, G. Pon, P. Laudet, T. Nebut, S. de Raucourt, O. Robert, C. Russel, A. Sylvestre-Baron, S. Tillier, T. Warren, M. Wiczorek, C. Yana, P. Zweifel, *Nature Geosci.* 13, 213 (2020).
- 55) “*The seismicity of Mars*” D. Giardini, P. Lognonné, W. Banerdt, W.T. Pike, U. Christensen, S. Ceylan, J. Clinton, M. van Driel, S. Stähler, M. Böse, R.F. Garcia, A. Khan, M. Panning, C. Perrin, D. Banfield, E. Beucler, C. Charalambous, F. Euchner, A. Horleston, A. Jacob, T. Kawamura, S. Kedar, G. Mainsant, J.-R. Scholz, S. 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. McClean, D. Mimoun, N. Murdoch, F. Nimmo, M. Nonon, C. Pardo, A. Rivoldini, J. A. Rodriguez Manfredi, H. Samuel, M. Schimmel, A.E. Stott, E. Stutzman, N. Teanby, T. Warren, R. Weber, M. Wiczorek, C. Yana, *Nature Geosci.* 13, 205 (2020).
- 54) “*Initial results from the InSight mission on Mars*” W.B. Banerdt, S. Smrekar, D. Banfield, D. Giardini, M. Golombek, C. Johnson, Ph. Lognonné, A. Spiga, T. Spohn, C. Perrin, S. Stähler, D. Antonangeli, S. Asmar, C. Beghein, N. Bowles, E. Bozdogan, P. Chi, U. Christensen, J. Clinton, G. Collins, I. Daubar, V. Dehant, M. Drilleau, M. Fillingim, W. Folkner, R. Garcia, J. Garvin, J. Grant, M. Grott, J. Grygorczuk, T. Hudson, J. Irving, G. Kargl, T. Kawamura, S. Kedar, S. King, B. Knapmeyer-Endrun, M. Knapmeyer, M. Lemmon, R. Lorenz, J. Maki, L. Margerin, S. McLennan, C. Michaut, D. Mimoun, A. Mittelholz, A. Mocquet, P. Morgan, N. Müller, N. Murdoch, S. Nagihara, C. Newman, F. Nimmo, M. Panning, W.T. Pike, A.-C. Plesa, S. Rodriguez, J.-A. Rodriguez-Manfredi, C.T. Russell, N. Schmerr, M. Siegler, S. Stanley, E. Stutzmann, N. Teanby, J. Tromp, M. van Driel, N. Warner, R. Weber, M. Wiczorek, *Nature Geosci.* 13, 183 (2020).
- 53) “*Axial compressibility and thermal equation of state of hcp Fe-5wt%Ni-5wt%Si*” E. Edmund, F. Miozzi, G. Morard, E. Boulard, A. Clark, F. Decremps, G. Garbarino, V. Svitlyk, M. Mezouar, D. Antonangeli, *Minerals* 10, 98 (2020).
- 52) “*Structure and elasticity of cubic Fe-Si alloys at high pressures*” E. Edmund, D. Antonangeli, F. Decremps, G. Morard, S. Ayrinhac, M. Gauthier, E. Boulard, M. Mezouar, M. Hanfland, N. Guignot, *Phys. Rev. B* 100, 134105 (2019).
- 51) “*Multiphonon anharmonicity of MgO*” P. Giura, L. Paulatto, F. He, R.P.S.M. Lobo, A. Bosak, E. Calandrini, L. Paolasini, D. Antonangeli, *Phys. Rev. B* 99, 220304(R) (2019).
- 50) “*Velocity-Density Systematics of Fe-5wt%Si: Constraints on Si Content in the Earth's Inner Core*” E. Edmund, D. Antonangeli, F. Decremps, F. Miozzi, G. Morard, E. Boulard, A.N. Clark, S. Ayrinhac, M. Gauthier, M.

- Morand, M. Mezouar, J. Geophys. Res. – Solid Earth 124, 3436 (2019).
- 49) “Phase transition boundary between fcc and hcp structures in Fe-Si alloy and its implications for terrestrial planetary cores” T. Komabayashi, G. Pesce, G. Morard, D. Antonangeli, R. Sinmyo, M. Mezouar, Am. Mineral. 104, 94 (2019).
  - 48) “Sound velocity and equation of state of liquid Cesium at high pressure and high temperature” F. Decremps, S. Ayrinhac, M. Gauthier, D. Antonangeli, M. Morand, Y. Garino, P. Parisiades, Phys. Rev. B 98, 184103 (2018).
  - 47) “Liquid properties in the Fe-FeS system under moderate pressure: tool box to model small planetary cores” G. Morard, J. Bouchet, A. Rivoldini, D. Antonangeli, M. Roberge, E. Boulard, A. Denoëud, M. Mezouar, Am. Mineral. 103, 1770 (2018).
  - 46) “Equation of state of SiC at extreme conditions: new insight into the interior of carbon rich exoplanets” F. Miozzi, G. Morard, D. Antonangeli, A.N. Clark, M. Mezouar, C. Dorn, A. Rozel, G. Fiquet, J. Geophys. Res. – Planets, 123. <https://doi.org/10.1029/2018JE005582> (2018).
  - 45) “Sound velocities and density measurements of solid hcp-Fe and hcp-Fe-Si(9wt.%) alloy at high pressure: Constraints on the Si abundance in the Earth’s inner core” D. Antonangeli, G. Morard, L. Paolasini, G. Garbarino, C.A. Murphy, E. Edmund, F. Decremps, G. Fiquet, A. Bosak, M. Mezouar, Y. Fei, Earth Planet. Sci. Lett. 482, 446 (2018).
  - 44) “Structure and density of Fe-C liquid alloys under high pressure” G. Morard, Y. Nakajima, D. Andrault, D. Antonangeli, A.L. Auzende, E. Boulard, S. Cervera, A. Clark, O.T. Lord, J. Siebert, V. Svitlyk, G. Garbarino, M. Mezouar, J. Geophys. Res. – Solid Earth 112, 7813 (2017).
  - 43) “Fe-FeO and Fe-Fe<sub>3</sub>C melting relations at Earth’s Core-Mantle Boundary conditions: implications for a volatile-rich or oxygen-rich core”, G. Morard, D. Andrault, D. Antonangeli, Y. Nakajima, A.L. Auzende, E. Boulard, S. Cervera, A. Clark, O.T. Lord, J. Siebert, V. Svitlyk, G. Garbarino, M. Mezouar, Earth Planet. Sci. Lett. 473, 94 (2017).
  - 42) “Elasticity and Poisson’s ratio of hexagonal close-packed hydrogen at high pressures”, A.F. Goncharov, M. Gauthier, D. Antonangeli, S. Ayrinhac, F. Decremps, M. Morand, A. Grechnev, S.M. Tretyak, and Yu.A. Freiman, Phys. Rev. B 95, 214104 (2017).
  - 41) “Phonon triggered rhombohedral lattice distortion in vanadium at high pressure”, D. Antonangeli, D.L. Farber, A. Bosak, C.M. Aracne, D.G. Ruddle, M. Krisch, Sci. Rep. 6, 31887 (2016).
  - 40) “Dynamical and elastic properties of MgSiO<sub>3</sub> perovskite (bridgmanite)”, B. Wehinger, A. Bosak, S. Nazzareni, D. Antonangeli, A. Mirone, S.L. Chaplot, R. Mittal, E. Ohtani, A. Shatskiy, S. Saxena, S. Ghose, M. Krisch, Geophys. Res. Lett. 43, 2568 (2016).
  - 39) “Melting of MORB at core mantle boundary”, G.K. Pradhan, G. Fiquet, J. Siebert, A.-L. Auzende, G. Morard, D. Antonangeli, G. Garbarino, Earth Planet. Sci. Lett. 431, 247 (2015).
  - 38) “Signature of a polyamorphic transition in the THz spectrum of vitreous GeO<sub>2</sub>”, A. Cunsolo, Y. Li, C.N. Kodituwakku, S. Wang, D. Antonangeli, F. Bencivenga, A. Battistoni, R. Verbeni, S. Tsutsui, A.Q.R. Baron, H.K. Mao, D. Bolmatov, Y.Q. Cai, Sci. Rep. 5, 14996 (2015).
  - 37) “Toward a mineral physics reference model for the Moon’s core”, D. Antonangeli, G. Morard, N.C. Schmerr, T. Komabayashi, M. Krisch, G. Fiquet, Y. Fei, PNAS 112, 3916 (2015).
  - 36) “Sound velocity of hcp-Fe at high pressure: experimental constraints, extrapolations and comparison with seismic models”, D. Antonangeli, E. Ohtani, Progress in Earth and Planetary Science 2:3 (2015).
  - 35) “Positive sound dispersion in vitreous GeO<sub>2</sub> at high pressure”, F. Bencivenga, D. Antonangeli, Phys. Rev. B 90, 134310 (2014).
  - 34) “Properties of iron alloys under the Earth’s core conditions”, G. Morard, D. Andrault, D. Antonangeli, J. Bouchet, C. R. Geoscience 346, 130 (2014).
  - 33) “Sound velocity of iron up to 152 GPa by picosecond acoustics in diamond anvil cell”, F. Decremps, D. Antonangeli, M. Gauthier, S. Ayrinhac, M. Morand, G. Le Marchand, F. Bergame, J. Philippe, Geophys. Res. Lett. 41, 1459 (2014).
  - 32) “Density measurements and structural properties of liquid and amorphous metals under high pressure”, G. Morard, G. Garbarino, D. Antonangeli, D. Andrault, N. Guignot, J. Siebert, M. Roberge, E. Boulard, A. Lincot, A. Denoëud, S. Petitgirard, High Press. Res. 34, 9 (2014).
  - 31) “The Earth’s core composition from high pressure density measurements of liquid iron alloys”, G. Morard, J. Siebert, D. Andrault, N. Guignot, G. Garbarino, F. Guyot, D. Antonangeli, Earth Planet. Sci. Lett. 373, 169 (2013).
  - 30) “Terrestrial accretion under oxidizing conditions”, J. Siebert, J. Badro, D. Antonangeli, F.J. Ryerson, Science 339, 1194 (2013).

- 29) “Simultaneous sound velocity and density measurements of hcp iron up to 93 GPa and 1100 K: an experimental test of the Birch's law at high temperature”, D. Antonangeli, T. Komabayashi, F. Occelli, E. Borissenko, A.C. Walters, G. Fiquet, Y. Fei, *Earth Planet. Sci. Lett.* 331, 210 (2012).
- 28) “Experimental investigation of the stability of Fe-rich carbonates in the lower mantle”, E. Boulard, N. Menguy, A. Auzende, K. Benzerara, H. Bureau, D. Antonangeli, A. Corgne, G. Morard, J. Siebert, J.P. Perrillat, F. Guyot, G. Fiquet, *J. Geophys. Res. – Solid Earth* 117, B02208 (2012).
- 27) “Metal-silicate partitioning of Ni and Co in a deep magma ocean”, J. Siebert, J. Badro, D. Antonangeli, F.J. Ryerson, *Earth Planet. Sci. Lett.* 321, 189 (2012).
- 26) “Melting of Fe-Ni-Si and Fe-Ni-S alloys at megabar pressures: implications for the Core-Mantle Boundary temperature”, G. Morard, D. Andrault, N. Guignot, J. Siebert, G. Garbarino, D. Antonangeli, *Phys. Chem. Min.* 38, 767 (2011).
- 25) “Pressure-induced collapse of ferromagnetism in cobalt up to 120 GPa as seen via x-ray magnetic circular dichroism”, R. Torchio, A. Monza, F. Baudelet, S. Pascarelli, O. Mathon, E. Pugh, D. Antonangeli, J.P. Itié, *Phys. Rev. B* 84, 060403(R) (2011).
- 24) “Phonons of the anomalous element cerium”, M. Krisch, D.L. Farber, R. Xu, D. Antonangeli, C.M. Aracne, A. Beraud, T.C. Chiang, J. Zarestky, D.Y. Kim, E.I. Isaev, R. Ahuja, B. Johansson, *PNAS* 108, 9342 (2011).
- 23) “A new host for carbon in the deep Earth”, E. Boulard, A. Gloter, A. Corgne, D. Antonangeli, A.L. Auzende, J.P. Perrillat, F. Guyot, G. Fiquet, *PNAS* 108, 5184 (2011).
- 22) “Diffusionless  $\gamma \leftrightarrow \alpha$  phase transition in poly- and single-crystalline cerium”, F. Decremps, L. Belhadi, D.L. Farber, K.T. Moore, F. Occelli, M. Gauthier, A. Polian, D. Antonangeli, C.M. Aracne-Ruddle, B. Amadon, *Phys. Rev. Lett.* 106, 065701 (2011).
- 21) “Spin crossover in ferropentacite at high pressure: a seismologically transparent transition?”, D. Antonangeli, J. Siebert, C.M. Aracne, D.L. Farber, A. Bosak, M. Hoesh, M. Krisch, F.J. Ryerson, G. Fiquet, J. Badro, *Science* 331, 64 (2011).
- 20) “Shear softening in tantalum at Mbar pressure”, D. Antonangeli, D.L. Farber, A.H. Said, L.R. Benedetti, C.M. Aracne, A. Landa, P. Söderlind, J.E. Klepeis, *Phys. Rev. B* 82, 132101 (2010).
- 19) “Composition of the Earth's inner core from high-pressure sound velocity measurements in Fe-Ni-Si alloys”, D. Antonangeli, J. Siebert, J. Badro, D.L. Farber, G. Fiquet, G. Morard, F.J. Ryerson, *Earth Planet. Sci. Lett.* 295, 292 (2010).
- 18) “Effect of composition, structure and spin state on the thermal conductivity of the Earth's lower mantle”, A.F. Goncharov, V.V. Struzhkin, J.A. Montoya, S. Kharlamova, R. Kundargi, J. Siebert, J. Badro, D. Antonangeli, F.J. Ryerson, W.L. Mao, *Phys. Earth Planet. Inter.* 180, 148 (2010).
- 17) “Kinetics of the isostructural  $\gamma$  to  $\alpha$  transition in cerium investigated by ultrasonics”, D. Antonangeli, D.L. Farber, C.M. Aracne, D.G. Ruddle, J. Siebert, B.P. Bonner, *High Press. Res.* 30, 151 (2010).
- 16) “Role of lattice in the two-steps evolution of  $\gamma$ -cerium under pressure”, F. Decremps, D. Antonangeli, B. Amadon, G. Schmerber, *Phys. Rev. B* 80, 132103 (2009).
- 15) “3D-imaging of the Fermi surface by thermal diffuse scattering”, A. Bosak, M. Hoesh, M. Krisch, D. Chernishov, P. Pattinson, C. Schulze-Briese, B. Winkler, V. Milman, K. Refson, D. Antonangeli, D. Farber, *Phys. Rev. Lett.* 103, 076403 (2009).
- 14) “Lattice dynamics of vanadium: inelastic x-ray scattering measurements”, A. Bosak, M. Hoesh, D. Antonangeli, D.L. Farber, I. Fischer, M. Krisch, *Phys. Rev. B* 78, 020301(R) (2008).
- 13) “An integrated method to determine melting temperature in high pressure laser heating experiments”, L.R. Benedetti, D. Antonangeli, D.L. Farber, M. Mezouar, *Appl. Phys. Lett.* 92, 141903 (2008).
- 12) “Anomalous pressure evolution of the axial ratio c/a in hcp cobalt: interplay between structure, magnetism and lattice dynamics”, D. Antonangeli, L.R. Benedetti, D.L. Farber, G. Steinle-Neumann, A-L. Auzende, J. Badro, M. Hanfland, M. Krisch, *Appl. Phys. Lett.* 92, 111911 (2008).
- 11) “Elasticity of hcp cobalt at high pressure and temperature: a quasi-harmonic case”, D. Antonangeli, M. Krisch, D.L. Farber, D.G. Ruddle, G. Fiquet, *Phys. Rev. Lett.* 100, 085501 (2008).
- 10) “Effect of light elements on the sound velocities in solid iron: implications for the composition of Earth's core”, J. Badro, G. Fiquet, F. Guyot, E. Gregoryanz, F. Occelli, D. Antonangeli, M. d'Astuto, *Earth Planet. Sci. Lett.* 254, 233 (2007).
- 9) “Elastic anisotropy in hcp metals at high pressure and the sound wave anisotropy of the Earth's inner core”, D. Antonangeli, S. Merkel, D.L. Farber, *Geophys. Res. Lett.* 33, L24303 (2006).
- 8) “Determination of the high-pressure elasticity of cobalt from measured interfacial acoustic wave velocity”, J.C. Crowhurst, D. Antonangeli, J.M. Brown, A.F. Goncharov, D.L. Farber, C.M. Aracne, *Appl. Phys. Lett.* 89, 111920 (2006).
- 7) “Lattice preferred orientation and stress in polycrystalline hcp-Co plastically deformed under high pressure”, S. Merkel, N. Miyajima, D. Antonangeli, G. Fiquet, T. Yagi, *J. Appl. Phys.* 100, 023510 (2006).

- 6) "Preparation and characterization of single crystal samples for high pressure experiments", D.L. Farber, D. Antonangeli, C.M. Aracne, J. Benterou, High Press. Res. 26, 1 (2006).
- 5) "Lattice dynamics of molybdenum at high pressure", D.L. Farber, M. Krisch, D. Antonangeli, A. Beraud, J. Badro, F. Occelli, D. Orlikowski, Phys. Rev. Lett. 96, 115502 (2006).
- 4) "Aggregate and single crystalline elasticity of hcp cobalt at high pressure", D. Antonangeli, M. Krisch, G. Fiquet, J. Badro, D.L. Farber, A. Bossak, S. Merkel, Phys. Rev. B 72, 134303 (2005).
- 3) "Elasticity of cobalt at high pressure studied by inelastic x-ray scattering", D. Antonangeli, M. Krisch, G. Fiquet, D.L. Farber, C.M. Aracne, J. Badro, F. Occelli, H. Requardt, Phys. Rev. Lett. 93, 215505 (2004).
- 2) "Elastic anisotropy in textured hcp-iron to 112 GPa from sound wave propagation measurements", D. Antonangeli, F. Occelli, H. Requardt, J. Badro, G. Fiquet, M. Krisch, Earth Planet. Sci. Lett. 225, 243 (2004).
- 1) "Application of inelastic x-ray scattering to the measurements of acoustic wave velocities in geophysical materials at very high pressure", G. Fiquet, J. Badro, F. Guyot, Ch. Bellin, M. Krisch, D. Antonangeli, H. Requardt, A. Mermet, D.L. Farber, C.M. Aracne-Ruddle, J. Zhang, Phys. Earth Planet. Inter. 143-144, 5 (2004).

## Research monographs

- ◆ "Rayons X et géomatériaux à hautes pressions et hautes températures: une fenêtre ouverte sur l'intérieur de la Terre" in "Rayons X et matière 5: RX 2013" eds. R. Guinebrière and P. Goudeau, Collection Science des Matériaux, ISTE editions (2017).
- ◆ "Physical properties of the inner core" in "Deep Earth: Physics and Chemistry of the Lower Mantle and Core" eds. H. Terasaki and R. Fischer, Geophysical Monograph 217, AGU/Wiley (2016).

## Other publications

- ◆ "What is at the core of the Moon? Deciphering through the modeling of liquid Fe-C-S alloys at high pressure on the PSICHE beamline", B. Zhao et al., SOLEIL News 2024.
- ◆ "The Fe-FeSi phase diagram at Mercury's core conditions", E. Edmund et al., Highlight of the 2022 DESY Photon Science Annual Report.
- ◆ "How thermal expansion of liquid Fe-S alloy controls the crystallization of small planetary bodies", F. Xu et al., SOLEIL Highlights 2021.
- ◆ "The core of the moon revealed by synchrotron experiments", D. Antonangeli et al., ESRF Highlights 2015.
- ◆ "Science under extreme conditions of pressures and temperatures at the ESRF", D. Andrault et al., Synchrotron Radiation News 26, 39 (2013).
- ◆ "Cerium's unusual behaviour", F. Decresp et al., ESRF Highlights 2011.
- ◆ "Lattice dynamics of cerium metal across the  $\gamma$ - $\alpha$  transition", M. Krisch et al., ESRF Highlights 2011.
- ◆ "New host for carbon in the deep Earth", E. Boulard et al., ESRF Highlights 2011.
- ◆ "Suppression of ferromagnetism in compressed 3d metals", R. Torchio et al., ESRF Highlights 2011.
- ◆ "Composition of the Earth's inner core from high-pressure sound velocity measurements in Fe-Ni-Si alloys", D. Antonangeli et al., ESRF Highlights 2010.
- ◆ "3D imaging of the Fermi surface by thermal diffuse scattering", A. Bosak et al., ESRF Highlights 2008.
- ◆ "Pressure dependence of phonon anomalies in molybdenum", D.L. Farber et al., ESRF Highlights 2006.
- ◆ "Elasticity and sound wave anisotropy of hcp metals at high pressure", D. Antonangeli et al., ESRF Highlights 2004.