Foivos G. Karakostas

Ph.D. - Research IT Engineer

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Experience

February 2026 - now: Research IT Engineer, Planétologie et Sciences Spatiales / Géodesie, Institut de Physique du Globe de Paris, France

March 2025 - January 2026: Postdoctoral Fellow, Aérospatiale et Mécanique, Université de Liège, Belgium

September 2023 - February 2025: Research Fellow in Seismology, Earth Sciences, University College London, United Kingdom

April 2021 - August 2023: Postdoctoral Researcher, Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Bologna, Italy

March 2019 - February 2021: Post-Doctoral Associate, Department of Geology, University of Maryland, United States

October 2018 - February 2019: Research Associate, Planétologie et Sciences Spatiales, Institut de Physique du Globe de Paris, France

Education

Ph.D. in Geophysics / Planetary Sciences, Université Paris Diderot - Institut de Physique du Globe de Paris, France, September 2018.
"Analysis and modeling of meteor impact and airburst generated seismic waves on terrestrial planets with atmosphere." Supervisors: Philippe Lognonné, Carene Larmat

M.Sc. Earth, Environmental and Planetary Sciences - Specialty: Geophysics, Université Paris Diderot - Institut de Physique du Globe de Paris, France, July 2014.
"Comparative shock waves analysis between Earth and Lunar meteor impacts." Supervisors: Philippe Lognonné, Katarina Miljković
"Study of the efficiency of a wind and thermal shield (WTS) for a Martian seismometer." Supervisor: Philippe Lognonné

B.S. Geology, Aristotle University of Thessaloniki, Greece, July 2010.
"Seismic and tectonic characteristics of the Gulf of Corinth"

Research experience

1. Seismology focused on extraterrestrial worlds. Comparative analysis on Earth, Mars, Moon.
2. Inversion of meteors as seismic sources. Study of the finite source generated by the Chelyabinsk bolide. Investigation of shock wave generation and propagation. Linear modelling approximations of nonlinear phenomena.
3. Planetary crust exploration through investigation of the seismic attenuation.
4. Investigation of upper mantle seismic anisotropy.
5. Forward seismic modelling using normal mode summation and spectral element method.

6. Hybrid seismic modelling in global and regional scale for box tomography.
7. Experimental and modelling investigation of Newtonian noise.
8. Laboratory measurements of elastic properties of soils.

Teaching experience

1. Practical Session for “Mathematical Methods in Geosciences”, B.S. degree of Earth Sciences Department, University College London, UK (2024)
2. Practical Sessions for “Seismology I”, B.S. degree of Earth Sciences Department, University College London, UK (2023, 2024)
3. Practice for “Field Geophysics”, B.S. degree in “Geology (Geophysics Track)”, Department of Geology, University of Maryland, College Park, MD (2019)
4. Practice for “Comparative Planetology”, MSc of “Earth Sciences, Environment and Planets”, Institut de Physique du Globe de Paris, Université Paris Diderot (2017)
5. Practice for “Oscillations of Planets and Stars”, MSc of “Earth Sciences, Environment and Planets”, Institut de Physique du Globe de Paris, Université Paris Diderot (2017)
6. Exercises for “Physics for Geosciences: Atmosphere, Ocean, Climate”, B.S. of “Earth Sciences, Environment and Planets”, Université Paris Diderot (2017)

Supervision

1. External collaborator at the BSc thesis, by Ourania Kontou, Department of Geology, Aristotle University of Thessaloniki, March 2023
2. Co-supervisor of the BSc thesis, by Melina Mantouvaki, Department of Geology and Geoenvironment, National and Kapodistrian University of Athens, September 2022

Science missions and projects participation

Einstein Telescope – Euregio Meuse-Rhine partners from Belgium, the Netherlands, and Germany

NEWTON – (NEw Window inTO Earth’s iNterior) – Dipartimento di Geoscienze, Università di Padova, and project partner INGV – Bologna (Italy).

InSight (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport) – NASA, CNES, DLR

LGWA (Lunar Gravitational Wave Antenna) – INAF, Univ. Twente, Univ. Padova, IFCA, UC Louvain, INFN, Politecnico Milano, Columbia Univ, Univ. Copenhagen, INGV, Univ. Bologna, Univ. Minnesota, Univ. Genève et al.

Internships

July 2012 – June 2013: Characterization of the properties of Martian Simulant Soild (CERMES, ENPS, Champs-sur-Marne, France) for InSight Mission (NASA, JPL, IPGP, DLR)

July 2008: Seismological data analysis of the earthquake of NW Peloponnesus of June 8th, 2008 (EPPO – Earthquake Planning and Protection Organization, Athens, Greece)

Skills

Scientific skills

Forward modeling Synthetic seismograms softwares (SPECFEM3D & AxiSEM - Spectral Element Method, MINOS - Normal Modes Summation)

Signal processing Packages of MATLAB and Python

Seismic data experience Acquisition via WebRequest and command line packages, metadata information extraction and generation

Geotechnical engineering Experience on soil mechanics laboratory (ENPC, France)

Scientific work evaluation Reviewer for NASA research proposal panel and top tiered peer-reviewed journals (Earth, Moon, and Planets, Geophysical Research Letters, Journal of Geophysical Research, Nature Communications)

Technical skills and languages

Tools MATLAB, Python, Fortran, LaTeX, OpenMP, MS Office, Shell, parallel computing

Data Processing Seismic data processing software (ObsPy), Generic Mapping Tools (pyGMT), GUI development (tkinter)

Statistical modelling Seismic data analysis, Geophysical Surveying, Site Characterization

Web-based computing Google Colab, Jupyter Notebook, High Performance Computing (HPC)

Data Visualisation ParaView, Matplotlib

Operating Systems UNIX, Linux, Windows

Version Control Github

Website building Wordpress, MediaWiki

Field Installation of seismographic networks | Participation in topographic measurements

Leadership and interpersonal skills

Scientific teams coordinator NASA InSight mission Impacts WG co-chair (2020–2021)

Community and networking EGU Seismology Division EC Representative (2024) | EuroPlanet EC Early Career Support WG co-chair & Communications WG member (2020–2023)

Conference organisation IPGP PhD Congress (2015)

Scientific podcast coordinator “Scientia Publica” | “Stairway to Space”

Administrative experience

Member of the Scientific Council, Institut de Physique du Globe de Paris (2026–)

Student deputy at the Doctoral School, Institut de Physique du Globe de Paris, (2015–2017)

Student deputy at the Senate of the Aristotle University of Thessaloniki, (2007–2009)

Student deputy at the Administrative Council of the Department of Geology, Aristotle University of Thessaloniki, (2006–2009)

Student deputy at the General Assembly of the Department of Geology, Aristotle University of Thessaloniki, (2006–2009)

Secretary of the Department of Geology Students’ Union, Aristotle University of Thessaloniki, (2006–2007)

Social activity

Member of the Hellenic Community of Paris and Suburbs (2012-2018)

Member of "Teenagers Parliament" (Program of the Ministry of Education of Greece) (2003)

Visits and cooperation

Los Alamos National Laboratory, Los Alamos, NM, USA – November, 2015, May - August, 2016

NASA Jet Propulsion Laboratory, Pasadena, CA, USA – May - June, 2014

Black Forest Observatory, Schiltach, Germany – July 2012, July, 2014

École Nationale des Ponts et Chaussées, Champs-sur-Marne, France – July, 2012 - July, 2013

Languages

Greek – Native

English – Professional Proficiency

French – Professional Proficiency

Italian – Professional Proficiency

Spanish – Elementary

Open Science

Codes and packages

Seismic modelling: SPECFEM3D collaborator and co-author

InSight seismic data acquisition and processing: Authorship and management of the University of Maryland "InSight-seismic-data-downloader" repository

Big seismic data acquisition and processing: Authorship and management of "pyGMT" repository

Publications

Peer Review Journals

1. Confal, J., Baccheschi, P., Pondrelli, S., **Karakostas, F.**, VanderBeek, B., Huang, Z., Faccenda, M., 2023. "Reproducing complex anisotropy patterns at subduction zones from splitting intensity analysis and anisotropy tomography." *Geophysical Journal International, 2023, ggad329*, doi:10.1093/gji/ggad329

2. Maguire, R., Lekic, V., Kim, D., Schmerr, N.C., Li, J., Beghein, C., Huang, Q., Irving, J., **Karakostas, F.**, Lognonné, P., Stähler, S.C., Banerdt, W.B., 2023. "Moment Tensor Estimation of Event S1222a and Implications for Tectonics Near the Dichotomy Boundary in Southern Elysium Planitia, Mars." *Journal of Geophysical Research: Planets, 128, e2023JE007793.* doi:10.1029/2023JE007793

3. Huang, Q., Schmerr, N.C., King, S.D., Kim, D., Rivoldini, A., Plesa, A.C., Samuel, H., Maguire, R.R., **Karakostas, F.**, Lekić, V., Charalambous, C., Collinet, M., Myhill, R., Antonangeli, D., Drilleau, M., Bystricky, M., Bollinger, C., Michaut, C., Gudkova, T., Irving, J.C.E., Fernando, B., Leng, K., Nissen-Meyer, T., Bejina, F., Bozdag, E., Beghein, C., Waszek, L., Siersch, N.C., Scholz, J-R., Davis, P.M., Lognonné, P., Pinot, B., Widmer-Schnidrig, R., Panning, M.P., Smrekar, S.E., Spohn, T., Pike, W.T., Giardini, D., and Banerdt, B., 2022. "Seismic detection of a deep mantle discontinuity within Mars by InSight." *Proceedings of the National Academy of Sciences*, 119(42), p.e2204474119. doi:10.1073/pnas.2204474119

4. Delage, P., Castillo Betancourt, J-P., Caicedo Hormaza, B., **Karakostas, F.**, De Laure, E., Lognonné, P., Antonangeli, D., Banerdt, B. (2022). "The interaction between the SEIS seismometer of the InSight Martian mission and a regolith simulant". *Geotechnique, 0 0:0, 1-12*, doi:10.1680/jgeot.21.00171

5. Menina, S., Margerin, L., Kawamura, T., Lognonné, P., Marti, J., Drilleau, M., Calvet, M., Compaire, N., Garcia, R., **Karakostas, F.**, Schmerr, N., van Driel, M., Stähler, S.C., Plasman, M., Giardini, D., Carrasco, S., Knapmeyer-Edrun, B., Sainton, G., Banerdt, W.B. (2021). "Energy Envelope and Attenuation Characteristics of High-Frequency (HF) and Very-High-Frequency (VF) Martian Events". *Bulletin of the Seismological Society of America, 111, 6, 3016-3034*, doi:10.1785/0120210127

6. **Karakostas, F.**, Schmerr, N., Maguire, R., Huang, Q., Kim, D., Lekic, V., Margerin, L., Nunn, C., Menina, S., Kawamura, T., Lognonné, P., Giardini, D., Banerdt, B. (2021). "Scattering Attenuation of the Martian Interior through Coda-Wave Analysis". *Bulletin of the Seismological Society of America, 111, 6, 3035-3054*, doi:10.1785/0120210253

7. Kim, D., Lekic, V., Irving, J.C.E., Schmerr, N., Knapmeyer-Edrun, B., Joshi, R., Panning, M.P., Tauzin, B., **Karakostas, F.**, Maguire, R., Huang, Q., Ceylan, S., Khan, A., Giardini, D., Wieczorek, M.A., Lognonné, P., Banerdt, W.B. (2021). "Improving constraints on planetary interiors with PSS receiver functions". *Journal of Geophysical Research: Planets, 126, 11, e2021JE006983*, doi:10.1029/2021JE006983

8. Khan, A., Ceylan, S., van Driel, M., Giardini, D., Lognonné, P., Samuel, H., Schmerr, N.C., Stähler, S.C., Duran, A.C., Huang, Q., Kim, D., Broquet, A., Charalambous, C., Clinton, J.F., Davis, P.M., Drilleau, M., **Karakostas, F.**, Lekic, V., McLennan, S.M., Maguire, R.R., Michaut, C., Panning, M.P., Pike, W.T., Pinot, B., Plasman, M., Scholz, J-R., Widmer-Schnidrig, R., Spohn, T., Smrekar, S.E., Banerdt, W. B. (2021). "Upper mantle structure of Mars from InSight seismic data." *Science, 373, 6553, 434-438*, doi:10.1126/science.abf2966

9. Fernando, B., Wójcicka, N., Froment, M., Maguire, R., Stähler, S. C., Rolland, L., Collins, G. S., Karatekin, O., Larmat, C., Sansom, E., Teanby, N. A., Spiga, A., **Karakostas, F.**, Leng, K„ Nissen-Meyer, T., Kawamura, T., Giardini, D., Lognonné, P., Banerdt, B., Daubar, I. (2021). "Listening for the landing: Seismic detections of Perseverance's arrival at Mars with InSight." *Earth and Space Science, 8, e2020EA001585*, doi:10.1029/2020EA001585

10. Daubar, I. J., Lognonné, P., Teanby, N. A., Collins, G. S., Clinton, J., Stähler, S., Spiga, A., **Karakostas, F.**, Ceylan, S., Malin, M., McEwen, A. S., Maguire, R., Charalambous, C., Onodera, K., Lucas, A., Rolland, L., Vaubaillon, J., Kawamura, T., Böse, M., Horleston, A., van Driel, M., Stevanović, J., Miljković, K., Fernando, B., Huang, Q., Giardini, D., Larmat, C. S., Leng, K., Rajšić, A., Schmerr, N., Wójcicka, N., Pike, T., Wookey, J., Rodriguez, S., Garcia, R., Banks, M. E., Margerin, L., Posiolova, L., Banerdt, B. (2020) "A New Crater Near InSight: Implications for Seismic Impact Detectability on Mars". *Journal of Geophysical Research: Planets, 125*, doi: 10.1029/2020JE006382

11. Giardini, D., Lognonné, P., Banerdt, W. B., Pike, W. T., Christensen, U., Ceylan, S., Clinton, J. F., van Driel, M., Stähler, S. C., Böse, M., Garcia, R. F., Khan, A., Panning, M., Perrin, C., Banfield, D., Beucler, E., Charalambous, C., Euchner, F., Horleston, A., Jacob, A., Kawamura, T., Kedar, S., Mainsant, G., Scholz, J.-R., Smrekar, S. E., Spiga, A., Agard, C., Antonangeli, D., Barkaoui, S., Barrett, E., Combes, P., Conejero, V., Daubar, I., Drilleau, M., Ferrier, C., Gabsi, T., Gudkova, T., Hurst, K., **Karakostas, F.**, King, S., Knapmeyer, M., Knapmeyer-Endrun, B., Llorca-Cejudo, R., Lucas, A., Luno, L., Margerin, L., McClean, J. B., Mimoun, D., Murdoch, N., Nimmo, F., Nonon, M., Pardo, C., Rivoldini, A., Rodriguez Manfredi, J. A., Samuel, H., Schimmel, M., Stott, A. E., Stutzmann, E., Teanby, N., Warren, T., Weber, R. C., Wieczorek, M., Yana, C. (2020). "The Seismicity of Mars". *Nat. Geosci.*, doi:10.1038/s41561-020-0539-8

12. Daubar, I., Lognonné, P., Teanby, N.A., Miljković, K., Stevanović, J., Vaubaillon, J., Kenda, B., Kawamura, T., Clinton, J., Lucas, A., Drilleau, M., Yana, C., Collins, G.S., Banfield, D., Golombek, M., Kedar, S., Schmerr, N., Garcia, R., Rodroguez, S., Gudkova, T., May, S., Banks, M., Maki, J., Sansom, E., **Karakostas, F.**, Panning, M., Fuji, N., Wookey, J., van Driel, M., Lemmon, M., Ansan, V., Böse, M., Stähler, S., Kanamori, H., Richardson, J., Smrekar, S., Banerdt, W.B (2018), "Impact-Seismic Investigations of the InSight Mission". *Space Sci. Rev., 214:132*, doi: 10.1007/s11214-018-0562-x

13. **Karakostas, F.**, Rakoto, V., Lognonné, P., Larmat, C., Daubar, I., Miljković, K., (2018). "Inversion of meteor Rayleigh waves on Earth and modeling of air coupled Rayleigh waves on Mars". *Space Sci. Rev., 214:127*, doi: 10.1007/s11214-018-0566-6

14. Fayon. L., Knapmeyer-Endrun, B., Lognonné, P., Bierwirth, M., Kramer, A., Delage, P., **Karakostas, F.**, Kedar, S., Murdoch, N., Garcia, R., Verdier, N., Tillier, S., Pike, W.T., Hurst, K., Schmelzbach, C., Banerdt, W.B (2018). "A numerical model of the SEIS leveling system transfer matrix and resonances: application to SEIS rotational seismology and dynamic ground interaction". *Space Sci. Rev., 214:127*, doi:10.1007/s11214-018-0555-9

15. Delage, P., **Karakostas, F.**, Dhemaied, A., Belmokhtar, M., Lognonné, P., Golombek, M., De Laure, E., Hurst, K., Dupla, J-C., Keddar, S., Cui, Y-J., Banerdt, B. (2017). "An Investigation of the Mechanical Properties of Some Martian Regolith Simulants with Respect to the Surface Properties at the InSight Mission Landing Site", *Space Sci. Rev., pp 1-23*, doi: 10.1007/s11214-017-0339-7

16. Lognonné, P., **Karakostas, F.**, Rolland, L., Nishikawa, Y. (2016). "Modeling of atmospheric-coupled Rayleigh waves on planets with atmosphere: From Earth observation to Mars and Venus perspectives", *J. Acoust. Soc. Am. 140 (2), pp 1447-1468*, doi: 10.1121/1.4960788

Conference proceedings

1. Lognonné, P., Banerdt,WB., Bills, C., Charalambous, C., Collins, G., Daubar, I., Drilleau, M., Kim, D., Fernando, B., Froment, M., Garcia, R., **Karakostas, F.**, Kawamura, T., Larmat, C., Mc Ewen, A., Panning, M., Posioleva, L., Malin, M., Miljikovic, K., Rolland, L., Rougier, E., Wójcicka, N., Xu, Z., Zhou L. (2024) "Multi-Messenger Impact Seismology with SEIS-Recorded Seismic and Acoustics Signals and High-Resolution Impact Imaging" *LPI Contributions, 3007, 3241*

2. Fernando, BA., Daubar, IJ., Garcia, R., **Karakostas, F.**, Bickel, V., Charalambous, C., Collins, G., Grindrod, P., Froment, M., Horleston, A., Posiolova, L., Wójcicka, N., Xu, Z., Pike, WT., Lognonné, P., Banerdt, WB. (2024) "Impact Science Investigations of the InSight Mission to Mars" *LPI Contributions, 3060, 6035*

3. **Karakostas, F.**, Morelli, A., Molinari, I., VenderBeek, B., Faccenda, M. (2023) "SPHY3D: A hybrid seismic computational framework for box-tomography of spherical Earth" *EGU General Assembly Conference Abstracts, EGU23-6471*

4. Confal, J.M., Baccheschi, P., Pondrelli, S., VanderBeek, B.P., **Karakostas, F.**, Faccenda M. (2023) "Testing the splitting intensity methodology to retrieve average, dipping, and depth dependent anisotropy from a complex subduction model" *EGU General Assembly Conference Abstracts, EGU22-7321*

5. **Karakostas, F.**, Morelli, A., Molinari, I., VenderBeek, B., Faccenda, M. (2022) "A hybrid computational Framework for 3D anisotropic full-Waveform inversion at a regional scale" *EGU General Assembly Conference Abstracts, EGU22-6498*

6. Lognonné, P., Banerdt, W.B., Giardini, D., Panning, M., Pike, W.T., Barkaoui, S., Böse, M., Brinkman, N., Charalambous, C., Compaire, N., Dahmen, N., Drilleau, M., Fernando, B., Garcia, R., Hobiger, M., Huang, Q., Hurst, K., Jacob, A., **Karakostas, F.**, Kawamura, T., Kedar, S., Khan, A., Kim, D., Knapmeyer-Edrun, B., Knapmeyer, M., Li, J., Menina, S., Murdoch, N., Onodera, K., Perrin, C., Pou, L., Rajšić, A., Samuel, H., Savoie, D., Schimmer, M., Sollberger, D., Stähler, S., Stott, A., Szilar, G., van Driel, M., Wojcicka, N., Zweifel, P., Beghein, C., Beucler, E., Antonangeli, D., Banfield, D., Bowles, N., Bozdag, E., Christensen, U., Clinton, J., Collins, G., Daubar, I., Irving, J., Lorenz, R., Margerin, L., Michaut, C., Mimoun, D., Nimmo, F., Plesa, A-C., Schmerr, N., Smrekar, S., Spiga, A., Teanby, N., Tromp, J., Weber, R., Wieczorek, M., Agard, C., Barret, E., Berenguer, J.L., Ceylan, S., Conajero, V., Duran, C., Dahmen, N., Froment, M., Horleston, A., Perrier, C., Fuji, N., Gabsi, T., Gaudin, E., Jaillant, B., Julien, A., Meunier, F., Pardo, C., ten Pierick, J., Plasman, M., Rochas, L., Sainton, G., Stutzmann, E., Xu, Z., Yana, C., Zenhäusern, G., SEIS InSight (2022) "SEIS Achievement for Mars Seismology After 1000 Sols of Seismic Monitoring" *LPI Contributions, 2678, 2279*

7. Huang, Q., Schmerr, N.C., King, S.D., Rivoldini, A., Plesa, A-C., Samuel, H., Kim, D., Maguire, R., **Karakostas, F.**, Lekic, V., Collinet, M., Myhill, R., Antonangeli, D., Drilleau, M., Bystricky, M., Bollinger, C., Michaut, C., Gudkova, T., Irving, J.C.E., Fernando, B., Leng, K., Nissen-Meyer, T., Bejina, F., Bozdag, E., Beghein, C., Waszek, L., Siersch, N.C., Scholz, J-R., Davis, P.M., Lognonné, P., Pinot, B., Widmer-Schnidrig, R., Panning, M.P., Smrekar, S.E., Spohn, T., Giardini, D., Banerdt, W.B. (2022) "Constraints on the Depth of Martian Mantile Transition Zone from Triplicated Waveforms" *LPI Contributions, 2678, 1673*

8. Menina, S., Margerin, L., Kawamura, T., Lognonné, P., Marti, J., Drilleau, M., Calvet, M., Compaire, N., Garcia, R., **Karakostas, F.**, Schmerr, N., van Driel, M., Stähler, S.C., Plasman, M., Giardini, D., Carrasco, S., Knapmeyer-Edrun, B., Sainton, G., Banerdt, B. (2022) "Earth-Moon-Mars Coda Attenuation Comparison". *LPI Contributions, 2678, 1564*

9. **Karakostas, F.**, Schmerr, N., Maguire, R., Huang, Q., Kim, D., Lekic, V., Margerin, L., Nunn, C., Menina, S., Kawamura, T., Lognonné, P., Giardini, D., Banerdt, B. (2021) "An analysis of the seismic scattering on Mars, using the InSight seismic data" *Europlanet Science Congress 2021, EPSC2021-258*

10. Menina, S., Margerin, L., Kawamura, T., Lognonné, P., Marti, J., Drilleau, M., Calvet, M., Schmerr, N., van Driel, M., **Karakostas, F.** (2021) "Energetic characteristics of High Frequency (HF) and Very High Frequency (VF) Martian Events". *EGU General Assembly Conference Abstracts, EGU21-14609*

11. Menina, S., Margerin, L., Kawamura, T., Lognonné, P., Marti, J., Drilleau, M., Calvet, M., Schmerr, N., van Driel, M., **Karakostas, F.** (2021) "Statistical and energetic characteristics of high frequency (HF) and very high frequency (VF) Martian events". *52nd Lunar and Planetary Science Conference, 1657*

12. Froment, M., Lognonné, P., Larmat, C., Rougier, E., Lei, Z., Kawamura, T. and **Karakostas, F.** (2021) "Numerical simulation of an impact-generated stress glut field and corresponding seismic source". *52nd Lunar and Planetary Science Conference, 1847*

13. Khan, A. , Ceylan, S., van Driel, M., Giardini, D. , Lognonne, P., Samuel, H., Schmerr, N., Stähler, S., Duran, A. C., Huang, Q., Kim, D., Charalambous, C., Clinton, J. F., Davis, P. M., Drilleau, M., **Karakostas, F.**, Lekic, V., Maguire, R. R., Michaut, C., Panning, M. P., Pike, W. T., Pinot, B., Plasman, M., Scholz, J.-R., Widmer-Schnydrig, R., Spohn, T., Smrekar, S. E., Banerdt, W. B. (2021) "Constraints on the Martian upper mantle structure from InSight seismic data". *52nd Lunar and Planetary Science Conference, 1836*

14. Lognonné, P., Banerdt, W.B., Giardini, D., Panning M.P., Pike, W.T., Antonangeli, D., Ballestra, J., Banfield, D., Beghein, C., Beucler, E., Bowles, N., Bozdag, E., Ceylan, S., Charalambous, C., Christensen, U., Clinton, J., Compaire, N., Collins, G., Dahmen, N., Daubar, I., van Driel, M., Drielleau, M., Fernando, B., Froment, M., Garcia, R., Irving, J., Khan, A., Kawamura, T., Kedar, S., Kenda, B., Knapmeyer-Endrun, B.„ Lorenz, R., Margerin, L., Martire, L., Michaut, C., Mimoun, D., Murdoch, N., Nimmo, F., Perrin, C., Plesa, A.-C., Schmerr, N., Scholz, J.R., Smrekar, S., Sollberger, S., Spiga, A., Stähler, S., Stutzmann E., Teanby, N., Tromp, J., Weber, R., Wieczorek, M., Wójcicka, N., Xu, H.„ Agard, C., Barrett, E., Berenguer, J.L., Böse, M., Conejero, V., Horleston, A., Hurst, K., Ferrier, C., Fuji, N., Gabsi, T., Gaudin, E., Jaillant, B. Jullien, A., **Karakostas, F.**, Labrot, P., Meunier, F., Pardo, C., ten Pierick, J., Plasman, M., Rochas, L., Sauron, A., Sainton, G., Xu, Z., Yana, C. and the InSight/SEIS Science Team (2021). "One Martian year of seismic monitoring of Mars by InSight: SEIS results and perspectives for the extended mission", *52nd Lunar and Planetary Science Conference, 1936*

15. **Karakostas, F.**, Schmerr, N., Bailey, S. H., DellaGiustina, D., Habib, N., Bray, V., Pettit, E., Dahl, P., Quinn, T., Marusiak, A. G., Avenson, B., Wagner, N., Brodbeck, J. I. (2020). "Seismic Investigation of a Meteoroid Airburst in Greenland, as a Terrestrial Analog for Icy Regions with an Atmosphere in the Solar System". *51st Lunar and Planetary Science Conference, 2120*

16. **Karakostas, F.**, Lognonné, P., Larmat, C., Schmerr, N. (2019). "A Martian impact full rayleigh waveform inversion technique for 1D identification of crustal structure", *50th Lunar and Planetary Science Conference, 1530*.

17. Schmerr, N.C., Kawamura, T., Margerin, L., van Driel, M., Garcia, R., **Karakostas, F.**, Tauzin, B., Lognonné, P. (2019). "Measuring the scattering and attenuation of seismic waves in Mars with the InSight seismometers", *50th Lunar and Planetary Science Conference, 1644*.

18. Miljković, K., Collins, G.S., Rajšić, A., Wojcicka, N., Neidhart, T., **Karakostas, F.**, Teanby, N.A., Daubar, I.J., Lognonné, P., Wieczorek, M.A., and the InSight team (2019). "Numerical investigation of impact-induced seismic signal in Martian crust", *50th Lunar and Planetary Science Conference, 1503*.

19. Wójcicka, N., Collins, G.S., Bastow, I., Miljković, K, Teanby, N.A., **Karakostas, F.**, Lognonné, P., and the InSight team (2019). "Investigating the relationship between the seismic efficiency and seismic moment and impactor properties on Mars", *50th Lunar and Planetary Science Conference, 2633*.

20. Daubar, I. J., Lognonné, P., Teanby, N. A., Miljkovic, K. Kawamura, T., Stevanović, J., Vaubaillon, J., Clinton, J., Golombek, M. P., Banfield, D., Lucas, A., Drilleau, M., van Driel, M., Collins, G. S., Gudkova, T., Rodriguez, S., Fuji, N., Kedar, S., Yana, C., Maki, J., Banks, M., Panning, M., Garcia, R. F., Sansom, E., May, S., Wookey, J., Schmerr, N., Lemmon, M., Kenda, B., Böse, M., Ansan, V., Kanamori, H., **Karakostas, F.**, Banerdt, W. B., Smrekar, S. (2018). "Impact-Seismic Investigations Planned for the InSight Mission". *49th Lunar and Planetary Science Conference, 1743*

21. Miljković, K., Sansom, E.K., Daubar, I.J., **Karakostas, F.**, Lognonné, P. (2016). "Fate of meteoroid impacts on Mars detectable by the InSight mission". *47th Lunar and Planetary Science Conference, 1768*

22. Daubar, I.J., Golombek, M.P., McEwen A.S., Byrne, S., Kreslevsky, M., Schmerr, N.C., Banks, M.E., Lognonné, P., Kawamura, T., **Karakostas, F.** (2015). "Measurement of the current martian cratering size frequency distribution, predictions for and expected improvements from InSight". *46th Lunar and Planetary Science Conference, 2468*.

In preparation

1. **Karakostas, F.**, Morelli, A., Molinari, I., VanderBeek, B.P., Faccenda, M. "3-D Anisotropic Model of the Ionian Subduction through Full-Waveform Box Tomography".

Conferences and other communication

Talks

2024

October 16, 2024 – Cambridge University, Bullard Laboratories Wednesday Seminars, Cambridge, UK – "Investigating seismic anisotropy in the Central Mediterranean"

2023

November 23, 2023 – UCL Global Geophysics Seminars, London, UK – "Investigating the Ionian subduction anisotropy with hybrid forward seismic modelling"

April 24, 2022 – EGU General Assembly 2023, Vienna, Austria – "SPHY3D: A hybrid seismic computational framework for box-tomography of spherical Earth"

2022

November 16, 2022 – Uppsala University Geophysics Seminar, Uppsala, Sweden – "Seismology from atmosphere to the interior and from Earth to Mars"

May 25, 2022 – EGU General Assembly 2022, Vienna, Austria – "A hybrid computational Framework for 3D anisotropic full-Waveform inversion at a regional scale"

May 5, 2022 – Liceo Ginnasio Luigi Galvani, Bologna, Italy – "Extraterrestrial geophysics: an adventure of humans and robots"

2021

September 24, 2021 – Europlanet Science Congress – “An analysis of the seismic scattering on Mars, using the InSight seismic data”

May 21, 2021 – INGV Bologna seminar series – “Seismology on Mars with InSight, focus on the scattering attenuation”

March 9, 2021 – InSight science team meeting, virtual – “S-coda wave analysis of InSight seismic data to determine the scattering attenuation in the crust of Mars”

January 28, 2021 – University College Dublin, School of Earth Sciences – “Seismology with InSight on Mars: focus on the seismic attenuation in the Lithosphere.”

2020

October 2, 2020 – EuroPlanet Science Congress – “The Qaanaaq airburst as an analog of seismic source in extraterrestrial atmospheres: seismic and infrasound investigation.”

July 22, 2020 — InSight science team meeting, virtual – “S-coda waves analysis of the InSight marsquakes, for the investigation of the seismic attenuation of Martian interior.”

April 1, 2020 – Carnegie Institution LPSC virtual session – “Seismic investigation of a meteoroid airburst in Greenland, as a terrestrial analog for icy regions with an atmosphere in the solar system” (YouTube link: https://youtu.be/PL959ZbRPSc?t=4070)

February 24, 2020 – InSight science team meeting, Nice France – “Seismic Attenuation of the Martian Interior from coda wave analysis.”

2019

June 19, 2019 – InSight science team meeting, Paris, France – “Impact surface waves modeling for InSight operations.”

May 7, 2019 – UMD Geophysics Group Seminars – “Inversion and modeling of Rayleigh waves generated by meteoroid events on planets with atmosphere.”

2018

November 5, 2018 – French InSight Day, Paris, France – “Inversion of impact Rayleigh waves on Earth and modeling of air-coupled Rayleigh waves on Mars.”

September 27, 2018 – InSight science team meeting, Graz, Austria – “Inversion of Rayleigh meteor waves on Earth and modeling on Mars.”

2017

June 29, 2017 – IPGP/AIM joint seminars, Paris, France – “Modeling of atmospheric Rayleigh waves generated on Earth and Mars.”

April 4, 2017 – InSight science team meeting, Oxford, UK – “Modeling of Rayleigh waves generated by meteor impacts on Mars.”

March 17, 2017 – Institut de Physique du Globe PhD Congress, Paris, France – “Modeling of meteor impact airbursts on Earth and Mars: comparative analysis”

2016

December 5, 2016 – InSight MSS-MQS meeting, Paris, France – “Atmospheric Events: Meteor Impacts”.

August 26, 2016 – National and Kapodistrian University of Athens, Department of Geology invited talk, Athens, Greece – “Modeling of meteor impact airbursts on Earth and Mars: comparative analysis.” *(in Greek)*

July 26, 2016 – Los Alamos National Laboratory, Center for Space and Earth Science seminars, Los Alamos, NM, USA – “Modeling of meteor impact airbursts on Earth and Mars: comparative analysis.”

May 24, 2016 – InSight science team meeting, Toulouse, France – “Inversion of seismic sources of atmospheric impacts on Earth and modeling on Mars.”

May 3, 2016 – InSight MSS-MQS meeting, ETH, Zurich, Switzerland – “Inversion of seismic sources of atmospheric impacts on Earth and modeling on Mars.”

March 18, 2016 – Institut de Physique du Globe PhD Congress, Paris, France – “Inversion of the Chelyabinsk seismic surface waves and comparative constraints on the generation of seismic waves by atmospheric Impacts on Earth and Mars.”

February 11, 2016 – IPGP/AIM joint seminars, Paris, France – “Inversion of meteor impact sources and analysis of the surface and shock waves generated by them.”

2015

December 3, 2015 – Los Alamos National Laboratory, Los Alamos, NM, USA – “Inversion of meteor impact sources and analysis of the surface and shock waves generated by them.”

Posters

2022

October 29, 2022 – SSA Meeting: Tomography, what comes next?, Toronto, Canada – “Implementation of spherical Earth for box-tomography in regional scale”

2021

December 15, 2021 – AGU Fall Meeting (hybrid) – “Seismic scattering in the Martian lithosphere: an analytical approach using InSight data”

2020

December 15, 2020 – AGU Fall Meeting (virtual) – “S-coda wave analysis of InSight seismic data to determine the scattering and intrinsic attenuation in the crust of Mars”

July 8, 2020 – NASA Science Exploration Forum (virtual meeting) – “Investigation of seismic and infrasound waves, generated by an airburst near Qaanaaq, Greenland”

March 17, 2020 – Lunar and Planetary Science Conference, The Woodlands, TX, USA – “Seismic investigation of a meteoroid airburst in Greenland, as a terrestrial analog for icy regions with an atmosphere in the solar system.” *(canceled, Poster published online)*

February 25, 2020 – InSight science team meeting, Nice, France – “Seismic Attenuation of the Martian Interior from coda wave analysis.”

2019

December 12, 2019 – AGU Fall Meeting, San Francisco, CA, USA – "Constraints for the Martian meteoroid impact seismic signals through modeling based on comparison of Terrestrial, Lunar and Martian data."

October 22, 2019 – InSight science team meeting, Los Angeles, CA, USA – "Update on Martian impacts modeling, after almost one year of Martian seismic data recordings."

March 19, 2019 – Lunar and Planetary Science Conference, The Woodlands, TX, USA – "A Martian impact full rayleigh waveform inversion technique for 1D identification of crustal structure."

2018

December 14, 2018 – AGU Fall Meeting, Washington, DC, USA – "Inversion of meteor Rayleigh waves on Earth and modeling of air coupled Rayleigh waves on Mars."

May 6, 2018 – InSight Science Team Meeting, Buellton, CA, USA – "Source inversion of Chelyabinsk and perspective for inversion of Mars airburst"

2017

November 28, 2017 – French InSight Day, Paris, France – "Modeling of meteor impact airbursts on Earth and Mars: comparative analysis."

2016

December 13, 2016 – AGU Fall Meeting, San Francisco, CA, USA – "Modeling of meteor impact airbursts on Earth and Mars: comparative analysis."

September 13, 2016 – International School of Space Science, L'Aquila, Italy – "Modeling of meteor impact airbursts on Earth and Mars: comparative analysis."

2015

December 14, 2015 – AGU Fall Meeting, San Francisco, CA, USA – "Inversion of the Chelyabinsk seismic surface waves and comparative constraints on the generation of seismic waves by atmospheric impacts on Earth and Mars."

October 13, 2015 – French seismologic and geodetic network (RESIF) meeting. La Grande Motte, France – "Inversion of the Chelyabinsk seismic surface waves and comparative constraints on the generation of seismic waves by atmospheric impacts on Earth and Mars."

October 6, 2015 – InSight science team meeting, Zurich, Switzerland – "Inversion of the Chelyabinsk seismic surface waves and comparative constraints on the generation of seismic waves by atmospheric impacts on Earth and Mars."

June 1, 2015 – Seismic Experiment of Internal Structure (SEIS) meeting. Fez, Morocco – "Shock waves analysis and inversion of seismic sources generated by meteor impacts on telluric bodies."

March 23, 2015 – Institut de Physique du Globe PhD Congress, Paris, France – "Shock waves analysis and inversion of seismic sources generated by meteor impacts on telluric bodies."

2014

November 20, 2014 – Structure and dynamics of Earth like planets, Workshop at College de France, Paris, France – "Comparative shock waves analysis between Earth and Lunar meteor impacts."

October 26, 2014 – LabEx UnivEarths Fall School, Florence, Italy – "Comparative shock waves analysis between Earth and Lunar meteor impacts."

Scientific associations membership

Member of the European Geosciences Union

Member of the American Geophysical Union

Member of the Seismological Society of America

Member of Society of Exploration Geophysicists

Member of EuroPlanet Society

Member of the Geotechnical Chamber of Greece

Member of Association of Greek Geologists

Other interests

Sports: Association Football – amateur level in Greece, France, USA, Italy, UK, and Belgium. Rugby union – amateur level in France and the USA.

Arts: Former member of the Municipal Band of Kalamaria, Thessaloniki. Experience as free-lancer musician.

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F. Karakostas