

Curriculum Vitae of Grant George Buffett, Ph.D.

Tel: +34 687-207-221

grant.buffett@gmail.com

1. Academic education

July 2008 – January 2011: Ph.D. in Geophysics from the University of Barcelona (Excellent Cum Laude); researcher focused on the application of seismic reflection profiles to the study of physical oceanographic processes (Seismic Oceanography) at Geosciences Barcelona (GEO3BCN-CSIC) (formerly ICTJA-CSIC).

Thesis title: Seismic Oceanography: A New Tool to Characterize Physical Oceanographic Structures and Processes. (<https://diposit.ub.edu/dspace/handle/2445/34927>)

July 2006 – July 2008: Master's degree in Geophysics from the University of Barcelona. Thesis title: Seismic Oceanography: New Perspectives in the Physical Characterization of Oceanographic Processes. Thesis awarded the Fundación García-Siñeriz prize for the "Best Research Work in Geophysics" (<https://www.fundaciongarciasineriz.es/2012/02/07/resultado-de-la-xv-convocatoria-2008-2009/>).

September 1995 – May 1999: Bachelor's degree in Earth Sciences (Geophysics) from Memorial University of Newfoundland, St. John's, Canada. Dissertation title: Mineralization of magnetic oxides and sulphides in Voisey's Bay, Labrador.

2. Professional experience and scientific activity

Geology and Geophysics

June 2017 – present

Independent scientific consultant. I provide scientific communication consulting services to help improve scientific writing, while editing scientific manuscripts for English grammar and style.

I engage in science outreach by collaborating with schools and local societies to bring the importance of the scientific method and critical-thinking skills to students. I am a serious amateur astronomer and astrophotographer of the solar system and deep-sky objects. Some of my photographs can be found at: <https://www.instagram.com/grantbuffettphotography/>.

I have also presented technical reports to the Ajuntament de Masquefa, Spain, concerning the nearby Can Mata landfill and its local environmental effects. I did this by carrying out a photogrammetry analysis of changes in its surface area over time using telescopes, telephoto lenses, and satellite remote sensing. I have also advised the Ajuntament de Masquefa on ways to make the capture and storage of methane from the landfill economically viable for electricity generation, thereby meeting European Union Climate Change objectives.

October 2023 – July 2025

Geophysicist at Lithica SCCL. <https://es.linkedin.com/company/lithica>

I deploy seismic monitoring stations to record ambient noise. I then analyze this noise as seismograms to determine geological structure in the search for critical raw materials (see AGEMERA project: <https://agemera.eu/>) and conduct fieldwork (Rio Tinto) with the STONE project. I have also analyzed magnetotelluric data (derived from variations in the Earth's magnetic field) to characterize the subsurface conductivity of rocks in order to determine the feasibility of geothermal resources.

June 2014 – January 2017

Postdoctoral researcher at Geosciences Barcelona (GEO3BCN) (formerly ICTJA-CSIC), Spain, and member of the Institut de Ciències del Mar (ICM-CSIC), researching the geodynamics of the Alpine orogeny, with particular emphasis on the tectonic evolution of the Alboran Sea and Gulf of Cadiz. Project funded by WE-ME

(PIE-CSIC-201330E111) and MITE (CGL2014-59516-P).

September 2011 – September 2013

Postdoctoral researcher at GEOMAR – Helmholtz Center for Ocean Research, Kiel, Germany . Research and development of seismic inversion and stochastic spectral analysis applied to thermohaline staircases in the Tyrrhenian Sea to characterize diapycnal mixing and turbulence. Project funded by Marie Curie Intra-European Fellowship (IEF) (grant No. FP7-PEOPLE-2010-IEF), with complementary support from the Poseidón Project (Programa de Proyectos de Investigación Fundamental no orientada – MICINN, grant No. CTM2010-21569).

July 2006 – May 2011

Predoctoral researcher at Geosciences Barcelona (GEO3BCN) (formerly ICTJA-CSIC), Spain, and member of the Barcelona Centre for Subsurface Imaging at the Institut de Ciències del Mar (ICM-CSIC) , researching seismic reflection profiles as a new physical oceanographic tool as part of the Master's and Ph.D. programmes, grant numbers: The GO Project (NEST-2003-1 adventure: no. FP6015603), GEOCEAN: (200530F081), Topoiberia (CSD2006-00041), Generalitat de Catalunya (2005SGR00874), Government of Spain: Ministry of Education and Science (CGL200404623).

January 2003 – May 2006

Geophysicist, Geological Survey of Canada, Ottawa, Canada

Land 2D and 3D seismic surveys and vertical seismic profiles from acquisition through interpretation and publication, in the context of sustainable development of Canada's natural resources and studies of the deep solid-Earth crust. I focused on two main areas: (i) acquisition, processing, and interpretation of 3-component seismic data to investigate an inverted sedimentary basin in the Yukon Territory as a potential natural-gas play, and (ii) processing seismic data for kimberlite imaging in Manitoba.

November 2000 – September 2001

Seismic Data Processor, Veritas DGC Inc., Calgary, Canada

Processing of 2D land seismic data for the Western Canadian Sedimentary Basin and other global basins known for hydrocarbon exploration.

September 1999 – November 2000

Seismic Data Processor, Geo-X Systems Ltd., Calgary, Canada

Processing of 2D land seismic data for hydrocarbon exploration in the Western Canadian Sedimentary Basin.

May 1998 – September 1998

Seismic Data Technician, CTC Pulsonic Ltd., Calgary, Canada

Preparation of land geometry designs for subsequent processing of seismic data.

3. Peer-reviewed publications and scientific communications

1. The Horizon Europe AGEMERA Project: Innovative Non-Invasive Geophysical Methodologies for Mineral Exploration, Jari Joutsenvaara, Marko Holma, Pasi Kuusiniemi, Jarmo Kortenien, Helena Seivane, David Marti-Linares, Martin Schimmel, Giulio Casini, Grant George Buffett, Markku Pirttijärvi, Ari Saartenoja, Barbara Štimac Tumara, and Ivan Kapustin, Adv. Geosci., 65, 171–180, 2025, <https://doi.org/10.5194/adgeo-65-171-2025>

2. Generative artificial intelligence is changing the landscape of research and education, G.G. Buffett, EGO European Gynecology and Obstetrics (2024); 2023/03:144-147 doi: 10.53260/EGO.2350310; Opinion article.

3. Seismic oceanography in the Tyrrhenian Sea: Thermohaline staircases, eddies, and internal waves., G.G. Buffett, G. Krahmann, D. Klaeschen, K. Schroder, V. Sallarès, C. Papenberg, C. Ranero, N. Zitellini, Journal of Geophysical Research: Oceans, 122. doi:10.1002/2017JC012726, (Impact factor: 2.71).

4. The nature of crustal reflectivity at the southwest Iberian margin, G.G. Buffett, M. Torne, R. Carbonell, M. Melchiorre, J. Vergés, M. Fernández, *Tectonophysics* 721 (2017) 239–253, doi:10.1016/j.tecto.2017.10.006, (Impact factor: 2.433).
5. Crust and mantle lithospheric structure of the Iberian Peninsula deduced from potential field modeling and thermal analysis, M. Torne, M. Fernández, J. Vergés, C. Ayala, M. Carolina Salas, I. Jimenez-Munt, G.G. Buffett, Jordi Díaz, *Tectonophysics* 663 (2015) 419–433, doi:10.1016/j.tecto.2015.06.003, (Impact factor: 2.433).
6. Stochastic heterogeneity mapping as a tool to quantify turbulence in reflectivity layers of thermohaline staircases in the Tyrrhenian Sea, published as conference proceedings and peer-reviewed by anonymous conference scientists: G.G. Buffett, R.W. Hobbs, E.A. Vsemirnova, D. Klaeschen, C. Hurich, C. Ranero and V. Sallarès, International Congress on Acoustics, Montreal, Quebec, Canada, June 2013.
7. Seismic and geological constraints on the structure and hydrocarbon potential of the northern Whitehorse trough, Yukon, Canada, D. White, M. Colpron, G.G. Buffett, and L.S. Lane, *Bulletin of Canadian Petroleum Geology*, December 2012, v. 60, p. 239–255, doi:10.2113/gscpgbull.60.4.239 (Impact Factor: 0.81).
8. Real Time Visualization of Thermohaline Finestructure using Seismic Offset Groups, G.G. Buffett, J.L. Pelegrí, J. de la Puente, R. Carbonell, *Methods in Oceanography*, ISSN 2211-1220, 10.1016/j.mio.2012.07.003, November 2012 (Impact factor: 1.314).
9. Oceanografia sísmica - Una nova eina per entendre els oceans (Seismic oceanography: A new tool to understand the oceans, in Catalan), G.G. Buffett, R. Carbonell, *Física*, June 2012, Societat Catalana de Física.
10. Seismic oceanography as a tool to monitor climate change, G.G. Buffett, R. Carbonell, *GeoQ Newsletter* (formerly, "The Eggs"), European Geoscience Union, 35, pp. 5–8, June 2011.
11. Stochastic heterogeneity mapping around a Mediterranean salt lens, G.G. Buffett, C.A. Hurich, E.A. Vsemirnova, R.W. Hobbs, V. Sallarès, R. Carbonell, D. Klaeschen, B. Biescas, *Ocean Sci.*, 6, 423–429, 2010 (Impact Factor: 2.232).
12. Relative contribution of temperature and salinity to ocean acoustic reflectivity, V. Sallarès, B. Biescas, G.G. Buffett, R. Carbonell, J.J. Dañobeita, J.L. Pelegrí, *Geophys. Res. Lett.*, 36, L00D06, doi:10.1029/2009GL040187, 2009 (Impact Factor: 3.982).
13. Seismic reflection along the path of the Mediterranean undercurrent, G.G. Buffett, B. Biescas, J.L. Pelegrí, F. Machín, V. Sallarès, R. Carbonell, D. Klaeschen, R.W. Hobbs, *Cont. Shelf Res.*, doi:10.1016/j.csr.2009.05.017, 2009 (Impact Factor: 2.304).
14. Imaging meddy fine structure using multichannel seismic reflection data, B. Biescas, V. Sallarès, J.L. Pelegrí, F. Machín, R. Carbonell, G.G. Buffett, J.J. Dañobeita, A. Calahorrano, *Geophys. Res. Lett.*, 35, L11609, doi:10.1029/2008GL033971, 2008 (Impact Factor: 3.982).
15. Structural constraints for oil and gas assessment in the Whitehorse Trough: New results from seismic profiling, D. White, M. Colpron, G.G. Buffett, and B. Roberts, 2006. In: *Yukon Exploration and Geology 2005*, D.S. Emond, G.D. Bradshaw, L.L. Lewis and L.H. Weston (eds.), Yukon Geological Survey, p. 315–323.
16. Preliminary Results from the Whitehorse Trough Seismic Survey, Yukon, G.G. Buffett, D. White, B. Roberts, M. Colpron, Geological Survey of Canada, *Current Research*, 2006-A2.

4. Conference and meeting attendance

1. AGEMERA General Assembly in Salamanca, Spain, March 2024 — <https://www.agemera.eu/news/41/agemera-partners-hold-ga-meeting-in-salamanca>
2. Seismix 2014 – 15th International Symposium on Deep Structure of the Continents and their Margins, Barcelona, Spain, October 2014.
3. Topo-Europe 2014, Barcelona, Spain, September 2014.
4. International Congress on Acoustics, Montreal, Quebec, Canada, June 2013.
5. EGU General Assembly, Vienna, Austria, April 2013.
6. AGU General Meeting, San Francisco, CA, USA, December 2012.
7. II Encuentro de la Oceanografía Física Española (EOF-2012), Madrid, Spain, November 2012.
8. EGU General Assembly, Vienna, Austria, April 2012.
9. Ocean Science Meeting, Salt Lake City, UT, USA, February 2012.
10. EGU General Assembly, Vienna, Austria, April 2011.
11. EGU General Assembly, Vienna, Austria, April 2010.
12. Ocean Science Meeting, Portland, OR, USA, February 2010.
13. AGU General Meeting, San Francisco, CA, USA, December 2009.
14. AGU Meeting of the Americas, Toronto, Canada, May 2009.
15. EGU General Assembly, Vienna, Austria, April 2009.
16. Seismic Oceanography Workshop, Begur, Spain, November 2008.
17. EGU General Assembly, Vienna, Austria, April 2008.
18. Ocean Science Meeting, Orlando, FL, USA, March 2008.
19. Congreso Geofísico Hispano-Luso, Tomar, Portugal, February 2008.
20. Geophysical Oceanography Workshop, 2007b, GEOMAR, Kiel, Germany, September 2007.
21. Geophysical Oceanography Workshop, 2006b, IFREMER, Brest, France, October 2006.
22. Exploration 2007 conference, Toronto, Canada, September 2007.
23. Yukon Open House, 2005, Whitehorse, Yukon, Canada, November 2005.
24. Yukon Open House, 2004, Whitehorse, Yukon, Canada, November 2004.
25. SEISMIX 2004 - 11th International Symposium on Deep Structure of the Continents and their Margins, Mont Tremblant, Quebec, September 2004.
26. CSEG Annual Meeting, 2001, Calgary, Alberta, Canada, June 2001.
27. SEG Annual Meeting, 2000, Calgary, Alberta, Canada, August 2000.
28. CSEG Annual Meeting, 1999, Calgary, Alberta, Canada, June 1999.
29. CSEG Annual Meeting, 1998, Calgary, Alberta, Canada, June 1998.

Research projects

1. STONE: Smart Terrain Control Using Cutting-Edge Technologies at the Rio Tinto mine, Spain
2. AGEMERA: Agile Exploration and Geo-modelling for European Critical Raw materials
3. WE-ME (Western Mediterranean): 2014–2017
4. Marie Curie Intra-European Fellowship (IEF) (2011–2013)
5. TOPOMED-GASSIS: Gibraltar Arc System Seismic Investigations, September–October 2011
6. TIR10: Seismic Survey in the Tyrrhenian Sea, October 2010
7. MEDOC: Mediterraneo Occidental: The basins of the western Mediterranean: a natural laboratory of the formation processes of continental extension margins.
8. Seismic calibration test profile
9. Structure of the Castellano-Extremeña Lithosphere: Seismic Profile ALCUDIA
10. Geophysical Oceanography: A new tool to understand the thermal structure and dynamics of the oceans
11. The Whitehorse Trough Seismic Survey
12. Vertical Seismic Sounding in Ribago, Quebec, Canada
13. Seismic Delineation of the Orion South (140/141) Kimberlite Pipe

Languages

English (native), Spanish (fluent), Catalan (fluent), French (basic)

LinkedIn: <https://www.linkedin.com/in/grant-george-buffett-ph-d-508a5611>

Instagram: <https://www.instagram.com/grantbuffettphotography/>