

Part A. PERSONAL INFORMATION

CV date	10/03/2020
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First and Family name	JESUS M. IBÁÑEZ GODOY		
Social Security, Passport, ID number		Age	
Researcher codes	WoS Researcher ID (*)	G-9910-2019	
	SCOPUS Author ID(*)		
	Open Researcher and Contributor ID (ORCID) **	0000-0002-9846-8781	

(*) At least one of these is mandatory

(**) Mandatory

A.1. Current position

Name of University/Institution	UNIVERSIDAD DE GRANADA		
Department	INSTITUTO ANDALUZ DE GEOFÍSICA		
Address and Country	C/ Profesor Clavera, nº 12. Campus de Cartuja, Granada, Spain		
Phone number	E-mail	jibanez@ugr.es	
Current position	CATEDRATICO DE UNIVERSIDAD	From	09/07/2010
Key words	Volcano-seismology. Seismic tomography. Seismic sources. Seismic signal recognition. Machine Learning. Making decision.		

A.2. Education

PhD	University	Year
Ciencias Físicas	Granada	1987
Doctor en Geofísica (Sismología)	Granada	1991

A.3. JCR articles, h Index, thesis supervised...

Number of Sexenios: 4. Last in 2015.

Number of Quinquenios: 6. Last in 2018.

Tramos de Excelencia de la Junta de Andalucía: 5. The highest number.

INSTITUTIONAL RESPONSIBILITIES

2016-2017 Member of the jury of the Jaime I research prizes, "Protection of the Environment".

2009-2012 Director of the Andalusian Institute of Geophysics, University of Granada

1998-2009 Vice-Head of the Andalusian Institute of Geophysics, University of Granada

Thesis. I advised 14 PhD theses (4 of them in ML applied to volcanoes) and 20 Msc Thesis (6 on ML) in Spain, Portugal, Argentina, Mexico and Italy. Currently, all of them have permanent or high-level contracts in academic and research institutions in Europe and America, and some of them additionally have other important responsibilities.

JCR articles, h Index. My track record is of 127 ISI publications since 1990, with a current H-index: 30. Additionally I have published 2 books, 20 chapters of books with ISBN, 10 technical reports with ISSN or ISBN, and 10 specific reports in the Smithsonian Institution.

CURRENT POSITION

July 2010 – present: Full Professor in Physics of the Earth. Department of Theoretical Physics and Cosmos. Science Faculty. University of Granada.

PREVIOUS POSITIONS

1993-2010: Associated professor in Physics of the Earth. University of Granada.

1992-1993: Assistant professor at University of Granada.

1992: Post-doctoral researcher at the UNAM, Mexico. Grant from the Spanish Government. Post-doctoral researcher at the University of Salerno, Italy. Grant from the Spanish Government.

1990-1991: Post-doctoral researcher at the Harvard University. Grant from the Spanish Government and Research Contract from Harvard University.

1988-1990: Pre-doctoral fellow at the Instituto Andaluz de Geofísica, Universidad de Granada. Grant from the Spanish Government.



Part B. CV SUMMARY (max. 3500 characters, including spaces)

The great milestones of my research are summarized in: pioneer in the use of seismic antennas in active volcanoes, beginning with the first deployment in Tenerife in 1994, continuing with Deception, Stromboli, Etna, Vesuvius, Colima, Copahue, Tenerife, and the Azores, among other volcanoes. I obtained the first tomographic images in velocity or in attenuation in many environments, such as the Azores, Deception, Tenerife, Stromboli, Asama, among other volcanoes. Pioneer in the use of Machine Learning in volcano seismology, with the first paper published in 2006. At present I have analyzed data with ML of volcanoes such as: Deception, Colima, Peteroa, Etna, Stromboli, Soufriere Hills, St. Helens, Telica, and San Cristóbal. I have been responsible (PI) for numerous field seismic campaigns in Antarctica (from 1994 to 2008), Tenerife, Stromboli, Etna, Colima, Vesuvius, Copahue, and Azores among others. I participated in 8 Antarctic expeditions (1988, 1994, 1995, 1996, 1998, 2000, 2004, 2005). I have been invited several times as an academic member in Universities of Argentina, Mexico, Portugal, Ireland, USA, France, Italy, Japan and Turkey among others. I acted as Principal Investigators (PI) on 21 projects or research contracts in competitive calls (12 of them are in the table), attracting nearly 4.1M € of external funding to the University of Granada, including up to 30 associated research contracts for technician, pre-doctoral and postdoctoral staff.

Reviewer (to the present) of projects at: Spain, NATO, Italy, New Zealand, Nederland, Luxemburg, Argentina, Mexico, France, Belgium, Ireland. I was invited editor in regular and special volumes in *Annals of Geophysics*, *Pageophs*, *PEPI* and *Geosciences*.

In the last ten years, I have devoted my time to academic, research and expertise services such as: teaching, training young scientists, research, procuring funding, managing projects and creating a multidisciplinary research group. In research, I always focused my effort in a multidisciplinary team, and as result we are forming a truly example of this way, including researchers from Signal Processing, Machine Learning, Geology, Physics and Seismology. In this period I have applied with success two National Research projects as a PI, combining all above disciplines, in panels of Engineering and Geosciences, and participated as Partner in two EU projects focused in volcano seismology. As indicator of the quality of this research is that one of the PhD students obtained a MSC fellowship to work in Udine (Italy) and I received another MSC fellow, both to work in ML applied to Volcano Seismology. I have consolidated an international research network (reflected in the contribution of papers) with researchers from Italy, Mexico, Argentina, Ireland, Germany, USA, UK, Japan and other countries. Contemporaneously in this period I conducted one of the most complex experiments of combined disciplines in a volcano, called TOMO-ETNA. Another quality indicator of my level of expertise is that since 2008 I am Vice-Chair and evaluator of the Marie Slovoska-Curie Programme (FP7 and H2020) of the EU in the actions ITN, IF and Societal Changes in Environmental and Geosciences panel: 143 contracts received. I am member of different Civil Protection Services in Spain, Mexico, Italy, Argentina and Cape Verde. In 2016 and 2017, I was member of the jury of the "Jaime I research prizes: Protection of the Environment", the most prestigious Spanish Prizes for Researchers.

Part C. RELEVANT MERITS

C.1. Most recent Publications (including books)

Bueno, A., Díaz-Moreno, A., De Angelis, S., Benítez, C., Ibáñez, J.M. (2019). Recursive Entropy Method of Segmentation for Seismic Signals. *Seismo. Res. Letts.* <https://doi.org/10.1785/0220180317>.

Bueno, A., Benítez, C., De Angelis, S., Díaz-Moreno, A., Ibáñez, J.M., (2019). Volcano-Seismic Transfer Learning and Uncertainty Quantification with Bayesian Neural Networks. *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*. DOI 10.1109/TGRS.2019.2941494.

Del Pezzo, E., E. Giampiccolo, T. Tuvé, G. Di Grazia, S. Gresta, J.M. Ibáñez (2019). Study of the regional pattern of intrinsic and scattering seismic attenuation in Eastern Sicily (Italy) from local earthquakes. *Geophy. Journ. Intern.* 218(2), 1456-1468. <https://doi.org/10.1093/gji/ggz208>.

Ibáñez, J.M, Castro-Cabrera, I., Cocina, O., Zuccarello, L., Brabc, S., Del Pezzo, E. and Prudencio, J. (2019). First 2D intrinsic and scattering attenuation images of Mt. Etna volcano from active seismic data. *Geophy. Journ. Intern.* <https://doi.org/10.1093/gji/ggz450>.



- Del Pezzo, E., de La Torre, A., Bianco, F., Ibáñez, J.M., Gabrielli, S., and De Siena, L. (2018). Numerically Calculated 3-D Space-weighting Functions to Image Earth Structures using coda waves. *Geosciences*, 8, 175, doi:10.3390/geosciences8050175.
- Díaz-Moreno, A., Barberi, G., Cocina, O., Koulakov, I., Scarfi, L., Zuccarello, L., Prudencio, J., García-Yeguas, A., Alvarez, I., García, L. and Ibáñez, J.M., (2018). New Insights on Mt. Etna's Crust and Relationship with the Regional Tectonic Framework from Joint Active and Passive P-Wave Seismic Tomography. *Surveys in Geophysics*. Vol 39 (1), 57-97. DOI: 10.1007/s10712-017-9425-3.
- García-Yeguas, A., Sanchez-Alzola, A., De Siena, L., Prudencio, J., Díaz-Moreno, A., Ibáñez, J.M., (2018). Scattering images from autocorrelation functions of P-wave seismic velocity images: the case of Tenerife Island (Canary Islands, Spain). *Bull. of Volcanology*. DOI: 10.1007/s00445-018-1205-5.
- Titos, M., Bueno, A., García, L., Benítez, C. Ibáñez, J.M., (2018). Detection and Classification of Continuous Volcano-Seismic Signals with Recurrent Neural Networks. *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*. TGRS-2017-01491.R1. DOI: 10.1109/TGRS.2018.2870202
- García-Yeguas, A., Ledo, J.J., Piña-Varas, P., Prudencio, J., Queralt, P., Marcuello, A., Ibáñez, J.M., Benjumea, B., Sánchez-Alzola, A. and Pérez, N., (2017). A novel 3D joint interpretation of magnetotelluric and seismic tomographic models: the case of the volcanic island of Tenerife. *Computer and Geosciences*, 109, 95–105, doi 10.1016/j.cageo.2017.08.003.
- Ibáñez, J.M., Díaz-Moreno, A., Prudencio, J., Zandomenighi, D., Wilcock, W., Barclay, A., Almendros, J., Benítez, C., García-Yeguas, C. and Alguacil, G., (2017). Database of multi-parametric geophysical data from the TOMO-DEC experiment on Deception Island, Antarctica. *Nature Sci. Data* 4:170128, doi: 10.1038/sdata.2017.128.
- Prudencio, J., Aoki, Y., Takeo, M., Ibáñez, J.M., Del Pezzo, E., and Song, W., (2017). Separation of scattering and intrinsic attenuation at Asama volcano (Japan): evidence of high volcanic structural contrasts. *Jour. Vol. Geoth. Res.*, 01, 14, doi: 10.1016/j.jvolgeores.2017.01.014.
- Cortés, G., Benítez, M.C., García, L., Alvarez, I. and Ibáñez, J.M. (2016). A Comparative Study of Dimensionality Reduction Algorithms Applied to Volcano-Seismic Signals. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. Vol 9, nº 1, pp 253-263. DOI. 0.1109/JSTARS.2015.2479300.
- Del Pezzo, E., Ibáñez, J.M., Prudencio, J., Bianco, F., De Siena, L. (2016). Absorption and Scattering 2D Volcano Images from Numerically Calculated Space-weighting functions. *Geophys. Journal International*. doi: 10.1093/gji/ggw171.
- Díaz-Moreno A., Koulakov I., García-Yeguas A., Jakovlev A., Barberi, G., Cocina O., Zuccarello L., Scarfi, L., Patané. D. , Álvarez I., García L., Benítez C., Prudencio J. , Ibáñez J.M., (2016). PARTOS - Passive and Active Ray TOMography Software: Description and preliminary analysis using TOMO-ETNA experiment's dataset. *Annals of Geophysics*, 59, 4, doi:10.4401/ag-7088.
- García, L., Álvarez I., Benítez, C., Titos, M., Bueno, M., Mota, S., De la Torre, A., Segura, J.C., Alguacil, G., Díaz-Moreno, A., Prudencio, J., García-Yeguas, A., Ibáñez, J.M., Zuccarello, L., Cocina, O., and Patané, D. (2016). Advances on the automatic estimation of the P-wave onset time. *Annals of Geophysics*, 59, 4, doi:10.4401/ag-7087.
- Ibáñez, J.M., et al., (2016). The TOMO-ETNA experiment: an imaging active campaign at Mt. Etna volcano. Context, main objectives, working-plans and involved research projects. *Annals of Geophysics*, 59, 4, S0426, doi:10.4401/ag-7079.
- Ibáñez, J.M., et al., (2016). TOMO-ETNA experiment at Etna volcano: activities on land. *Annals of Geophysics*, 59, 4, S0427, doi:10.4401/ag-7080.
- Carmona, E., Almendros, J., Alguacil, G., Soto, J.I., Luzón, F. and Ibáñez, J.M. (2015). Identification of T-Waves in the Alboran Sea. *Pure and Applied Geophysics*, 24 (1), 1-10. DOI 10.1007/s00024-014-1018-1.
- Díaz-Moreno, A., Ibáñez, J.M., De Angelis, S., García-Yeguas, A., Prudencio, J., Morales, J. and Tuvè, T. (2015). Seismic hydraulic fracture migration originated by successive deep magma pulses: The 2011-2013 unrest of the volcanic island of El Hierro. *Journal of Geophysical Research*. DOI 10.1002/2015JB012249.
- Prudencio, J., L. De Siena, J.M. Ibáñez, E. Del Pezzo, A. García-Yeguas and A. Díaz-Moreno (2015). The 3D attenuation structure of Deception Island (Antarctica). *Surveys in Geophysics*, 36 (3), 371-390. DOI: 10.1007/s10712-015-9322-6.



Prudencio, J., E. Del Pezzo, J. M. Ibáñez, E. Giampiccolo and D. Patané (2015). Two-dimensional seismic attenuation images of Stromboli Island using active data. *Geoph. Res. Lett.* 42, 1–8, doi:10.1002/2015GL063293.

Prudencio, J., J. M. Ibáñez, E. Del Pezzo, J. Martí, A. García-Yeguas, L. De Siena. (2015) Attenuation tomography of the volcanic island of Tenerife. *Surveys in Geophysics.* 36, 5, 693-716. DOI 10.1007/s10712-015-9333-3.

Ontiveros-Ortega, A., Vidal, F., Giménez, E., and Ibáñez, J.M. Effect of heavy metals on the surface free energy and zeta potential of volcanic glass: implications on the adhesion and growth of microorganisms. *Journal of Materials Science* 49 (9), 3550-3559. DOI 10.1007/s10853-014-8077-7

Pérez, N., L. Somoza, P. A. Hernández, L. González de Vallejo, R. León, T. Sagiya, A. Biain, F. J. González, T. Medialdea, J. Barrancos, J.M. Ibáñez, H. Sumino, K. Nogami and C. Romero-Ruiz (2014). Evidence from acoustic imaging for submarine volcanic activity in 2012 off the west coast of El Hierro (Canary Islands, Spain). *Bull. of Volcanol.*, 76:882. DOI: 10.1007/s00445-014-0882-y.

Carmona, E., Almendros, J., Martín, R., Cortés, G., Alguacil, G, Moreno, J., Martín, J.B., Martos, A., Serrano I., Stich, D. and Ibáñez J.M. (2014) Advances in seismic monitoring at Deception Island volcano (Antarctica) since the International Polar Year. *Annals of Geophysics*, 57, 3, doi:10.4401/ag-6378.

C.2. Research projects and grants

1. Reference: TEC2015-68752-R

Título: Extracción del conocimiento del estado de volcanes activos y su aplicación en el modelado del pronóstico de erupciones mediante el análisis avanzado de la señal sísmica” KNOWAVES

Investigador principal (nombre y apellidos): Jesús M. Ibáñez Godoy

Entidad financiadora: Gobierno de España

Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA):01/01/2016 – 31/12/2019

Financiación recibida (en euros): 245.000

2. Reference: Grant agreement n°308665

Título: EC-FP7 MEDiterranean SUPersite Volcanoes (MED-SUV).

Investigador principal (nombre y apellidos): Jesús M. Ibáñez Godoy

Entidad financiadora: European Union

Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA):01/06/2013 – 31/05/2016

Financiación recibida (en euros): 458.000

3. Reference: EUOFLEETS2-SI-005_MED-SUV.ISES

Título: “MEDiterranean SUPersite Volcanoes. Integration of on-shore and off-shore passive and active Seismic Experiments in South Italy”.

Investigador principal (nombre y apellidos): Jesús M. Ibáñez Godoy y Dr. Giuseppe Puglisi.

Entidad financiadora: European Union

Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA):15/06/2014 – 14/02/2015

Financiación recibida (en euros): 600.000

4. Reference: CGL2011-29499-C02-01

Título: “Desarrollo De Modelos De Propagación De Ondas Sísmicas En Medios Altamente Heterogéneos Y Sus Efectos: Aplicación A Regiones Volcánicas Activas” Epehestos.

Investigador principal (nombre y apellidos): Jesús M. Ibáñez Godoy

Entidad financiadora: Gobierno de España

Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA):01/01/2012 – 31/12/2014

Financiación recibida (en euros): 242.000

5. Reference: CGL2008-01660

Título: Modelos Sísmicos De Alta Resolución De Volúmenes Sismogénicos De Volcanes Activos, Islas De Tenerife Y Decepción, Y Su Impacto En La Valoración Del Peligro Volcánico. HISS”.

Investigador principal (nombre y apellidos): Jesús M. Ibáñez Godoy

Entidad financiadora: Gobierno de España

Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA):01/01/2009 – 31/12/2011

Financiación recibida (en euros): 284.713