CV date	13-Mar-2023

Part A. PERSONAL INFORMATION

First and Family name	José Ángel López Comino		
Passport, ID number		Age	
Researcher codes	WoS Researcher ID	H-6392-2015	
	SCOPUS Author ID	54961036000	
	ORCID code	0000-0002-3675-6825	

A.1. Current position

Name of University/Institution	University of Granada, Instituto Andaluz de Geofísica		
Department	Física Teórica y del Cosmos		
Address and Country	Calle del Prof. Clavera, 12, 18071, Granada, Spain		
Phone number	958249554	E-mail	jalopezcomino@ugr.es
Current position	Permanent Professor (Profesor Contratado Doctor Indefinido)	From	03-Oct-2022
Key words	Induced seismicity, earthquake source parameters, rupture directivity, finite-fault inversion, microseismicity		

A.2. Education

Degree/PhD	University	Year
PhD in Earth Sciences	University of Granada (Spain)	2014
Master degree of Geophysics	University of Granada (Spain)	2012
University Expert in coordinator of health and safety in construction works	University of Granada (Spain)	2010
Master degree in Civil Engineering (“Ingeniero de Caminos, Canales y Puertos”)	University of Granada (Spain)	2010

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

Author of 27 publications (23 JCR articles including 1 in Science, 12 as corresponding author and 16 without my PhD supervisors) that received a total of 557 citations to date (h-index of 10) and author of 47 abstracts, posters and oral contributions in national and international congresses (30 of them as first author).

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

José Ángel López Comino is a permanent professor at the University of Granada (UGR) from October 2022. He is ascribed to the Instituto Andaluz de Geofísica (IAG) and the Physics of the Earth group within the Departamento de Física Teórica y del Cosmos. His main research line is focused on advanced earthquake sources analysis of natural and induced seismicity.

In recent years, he has led three projects as principal investigator establishing international collaborations with different countries. These projects have been funded by Marie Sklodowsca-Curie COFUND Athenea3i-UGR and FEDER funds at the UGR, and by Deutsche Forschungsgemeinschaft (DFG) program at the University of Potsdam (Germany). The main target of these projects was to assess the physical processes which drive nucleation and growth of seismic sources, stimulated by fluid injection operations, in order to understand what controls the direction the rupture front propagates.

His postdoctoral stage has been mainly focused on induced seismicity assessment by different hydraulic fracturing experiments in Europe (Wysin, Poland and Äspö Hard Rock Laboratory, Sweden) and the seismic source analysis of the largest and most relevant induced earthquakes worldwide (e.g. the 2016 Mw 5.1 Fairview, Oklahoma earthquake; the 2017 Mw 5.5 Pohang, South Korea earthquake; the 2013 seismic sequence at the Castor injection platform offshore Spain), reaching very high impact publications (e.g. in Science, Scientific Reports, Geophysical Research Letters and Nature Communications). He was a postdoctoral researcher at the King Abdullah University of Science and Technology (KAUST,

Saudi Arabia) in the Computational Earthquake Seismology (CES) research group with a strong collaboration with the Ludwig Maximilians University of Munich (Germany). Previously, he also worked as postdoctoral researcher at the GFZ German Research Center for Geosciences (Germany). This last position was ascribed to the European Union project SHEER (SHale gas Exploration and Exploitation induced Risks), where 8 research institution from different countries were involved.

Furthermore, he has spent research stays at the scientific-military base "Gabriel de Castilla" (Deception Island, Antarctica), University of East Anglia (UK), Purdue University (USA), GFZ (Germany), KAUST (Saudi Arabia) and University of Potsdam (Germany). He has participated in 12 research projects, with national, regional and European funding. He has been awarded fellowships by several research funding programs. Teaching experience was also acquired at the University of Granada for 5 years on different Degrees (Environmental Sciences, Physics and Civil Engineering) and Master (Geophysics and Structures). He obtained his PhD in Earth Sciences from the UGR with cum laude qualification (October 2014). He was also hired by the Ferrovial-Agroman S.A. to work in the ring highway of Málaga (Spain). He has obtained the professor accreditations ("Profesor Ayudante Doctor" in 03.02.2016 and "Profesor Contratado Doctor" in 22.05.2019) by the Spanish institution "ANECA".

Part C. RELEVANT MERITS

C.1. Publications

1.- **López-Comino, J. A.,** Cesca, S., Niemz, P., Dahm, T. and Zang, A. (2021). Rupture directivity in 3D inferred from acoustic emissions events in a mine-scale hydraulic fracturing experiment. *Front. Earth Sci.* 9:670757.

2.- Cesca, S., Stich, D., Grigoli, F., Vuan, A**., López-Comino, J. A.**, Niemz, P., Blanch, E., Dahm, T. and Ellsworth, W. L. (2021). Seismicity at the Castor gas reservoir driven by pore pressure diffusion and asperities loading. *Nature Communications*, 12(1), 4783.

3.- **López-Comino, J. A.** and Cesca, S. (2018). Source complexity of an injection induced event: the 2016 Mw 5.1 Fairview, Oklahoma earthquake. *Geophys. Res. Lett.*, 45 (9), 4025-4032.

4.- Grigoli, F., Cesca, S., Rinaldi, A. P., Manconi, A., **López-Comino, J. A.**, Clinton, J. F., Westaway, R., Cauzzi, C., Dahm, T. and Wiemer, S. (2018). The November 2017 Mw 5.5 Pohang earthquake: A possible case of induced seismicity in South Korea. *Science*, 360 (6392), 1003-1006.

5.- **López-Comino, J. A.**, Cesca, S., Jarosławski, J., Montcoudiol, N., Heimann, S., Dahm, T., Lasocki, S., Gunning, A., Capuano, P. and Ellsworth, W. L. (2018). Induced seismicity response of hydraulic fracturing: results of a multidisciplinary monitoring at the Wysin site, Poland, *Scientific Reports*, 8, 8653.

6.- **López-Comino, J. A.**, Cesca, S., Heimann, S., Grigoli, F., Milkereit, C., Dahm, T. and Zang, A. (2017). Characterization of hydraulic fractures growth during the Äspö Hard Rock Laboratory experiment (Sweden), *Rock Mechanics and Rock Engineering*, 50, 11, p. 2985-3001.

7.- **López-Comino, J. A.**, Cesca, S., Kriegerowski, M., Heimann, S., Dahm, T., Mirek, J. and Lasocki, S. (2017). Monitoring performance using synthetic data for induced microseismicity by hydrofracking at the Wysin site (Poland), *Geophys. J. Int.*, 210, 42-55.

8.- **López-Comino, J. A.**, Stich, D., Morales, J. and Ferreira, A. M. G. (2016). Resolution of rupture directivity in weak events: 1-D versus 2-D source parameterizations for the 2011, Mw 4.6 and 5.2 Lorca earthquakes, Spain, *J. Geophys. Res. Solid Earth*, 121, 6608–6626.

9.- **López-Comino, J. A.**, Stich, D., Ferreira, A.M.G. and Morales, J. (2015). Extended fault inversion with random slipmaps: a resolution test for the 2012 Mw 7.6 Nicoya, Costa Rica earthquake. *Geophys. J. Int.*, 202, 77–93.

10.- **López-Comino, J. A.**, Mancilla, F., Morales, J. and Stich, D. (2012). Rupture directivity of the 2011, Mw 5.2 Lorca earthquake (Spain), *Geophys. Res. Lett.*, 39, L03301.

C.2. Funded projects as Principal Investigator

1.- *ASPIS* project (Assessing the Source Properties of Induced Seismicity by fluid injection on different scales through rupture directivity and extended fault inversion).

Funding by: Marie Sklodowsca-Curie COFUND Athenea3i-UGR (H2020-MSCA-COFUND-2016, Attracting and Encouraging Triple I Talent Mobility-Athenea3i) at the University of Granada (Spain).

Duration: 29 months (2019 – 2022). Funding: 155.000 Euros.

2-. *INDI* project (INsights into rupture DIrectivity patterns from microseismicity to weak events: implications on induced seismicity by fluid injection processes).

Funding by: Deutsche Forschungsgemeinschaft (DFG) program (Module: Temporary Positions for Principal Investigators) at the University of Potsdam (Germany).

Duration: 2 years (2019 – 2020). Funding: 185.900 Euros.

3-. *MOSIS* project (Monitorización Sísmica del frente activo de las béticas occidentales).

Funding by: FEDER Andalucía 2014-2020 (B-RNM-528-UGR20) at the University of Granada (Spain).

Principal Investigator: Daniel Stich and José Ángel López Comino.

Duration: 2 years (2021 – 2023). Funding: 40.000 Euros.

C.3. Stays in Foreign R&D Centres

1.- GFZ, German Research Centre for Geosciences, Potsdam (Germany).

Principal Investigator of ASPIS project (Athenea3i) - outgoing phase.

Duration: 1 year (stage1: Oct 2019); stage2: Aug 2020 to Jun 2021).

2.- University of Potsdam, Potsdam-Golm (Germany).

Principal Investigator of INDI project (DFG).

Duration: 9 months (Nov 2019 - July 2020).

3.- King Abdullah University of Science and Technology (KAUST), Saudi Arabia.

Potsdoctoral position with Dr. P. Martin Mai.

Duration: 8 months (21.10.2018 - 30.06.2019)

4.- GFZ, German Research Centre for Geosciences, Potsdam (Germany).

Postdoctoral position with Dr. Simone Cesca.

Duration: 2 years and 7 months (Oct 2015 - Apr 2018)

5- Purdue University, West Lafayette, IN (USA).

Postdoctoral visiting research with Dr. Robert L. Nowack.

Duration: 3 months (12.06.2015 – 08.09.2015)

6.- Scientific-military base “Gabriel de Castilla”, Deception Island, (Antarctica).

Surveillance of the volcanic and seismic activity in Deception Island and maintenance of permanent seismic stations in the South Shetland.

Principal investigator: Daniel Stich and Francisco Javier Almendros González.

Duration: 4 months (24.01.2012 – 05.03.2012 / 14.01.2013 – 05.03.2013)

7.- University of East Anglia, Norwich (United Kingdom).

Predoctoral visiting research with Dr. Ana M. G. Ferreira.

Duration: 3 months (07.06.2012 – 07.09.2012)

C.4. Participation in Research projects

1.- FRAGEN project (Fracture activation in geo-reservoirs - physics of (induced) earthquakes in complex fault networks).
Funding entity: KAUST (Saudi Arabia). Duration: 2018-2019
Entities involved: KAUST (Saudi Arabia) and LMU, Munich (Germany).
Principal Investigator: P. Martin Mai.

2.- SHEER project (SHale gas Exploration and Exploitation induced Risks)
Funding entity: European Union's Horizon 2020. Duration: 2015-2018
Entities involved: GFZ-Potsdam (Germany) and other 7 research institution from different countries.
Principal Investigator: Paolo Capuano

3.- 3D structure of the crust and mantle of the arc of Gibraltar and numerical modeling of seismic wave propagation of earthquakes in the contact area between Eurasia and Nubia plates.
Funding entity: Conserjería de Economía, innovación y ciencia (P09-RNM-5100)
Duration: 2013-2015
Entities involved: University of Granada
Principal Investigator: José Morales Soto.

4.- Surveillance of the volcanic and seismic activity in Deception islands and maintenance of permanent seismic stations in the South Shetland.
Funding entity: Ministerio de Ciencia e innovación (CTM2011-16049-E and CTM2010-11740-E).
Duration: 2011-2013
Entities involved: University of Granada
Principal Investigator: Daniel Stich and Francisco Javier Almendros González

C.5. Teaching experience

- Master Degree in Geophysics – Seismic Risks (1 Academic Courses at UGR).
- Master Degree in Structures - Ground Seismic Excitation (2 Academic Courses at UGR).
- Degree in Civil Engineering - Physics (4 Academic Courses at UGR)
- Degree in Environmental Science - Physics (3 Academic Courses at UGR).
- Degree in Physics - Geophysics (1 Academic Courses at UGR).

C.6. Contracts / Work history

2022 – present	Permanent professor at the University of Granada (Spain)
2019 - 2022	Principal Investigator (ASPIS and INDI project) at University of Granada (Spain) and University of Potsdam (Germany).
2018 - 2019	PostDoc position (FRAGEN project), King Abdullah University of Science and Technology (Saudi Arabia).
2015 - 2018	PostDoc position (SHEER project) at GFZ German Research Center, Postdam (Germany).
2014 - 2015	PostDoc fellowship at University of Granada, Andalusia Institute of Geophysics (Spain), funded by the government of Andalusia.
2010 - 2014	Pre-doctoral fellowship at University of Granada, Andalusia Institute of Geophysics (Spain), funded by the government of Andalusia.
2008 / 2010	Project Engineer at "Ferrovial-Agromán S.A" (Málaga, Spain) Duration: 01.07.2008–30.09.2008 / 26.04.2010–31.07.2010 (6 months)