



CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	Manuel (Manel)		
Family name	Prada	Dacasa	
Gender (*)	Male	Birth date	02/09/1985
ID number	46979468J		
e-mail	mprada@icm.csic.es	URL Link	
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-1108-832X		

A.1. Current position

Position	Researcher (Contratado laboral fijo Doctor FC3)		
Initial date	1/2/2022		
Institution	Institut de Ciències del Mar		
Department/Center	Geociències Marines		
Country	Spain	Teleph. number	+34 93 230 95 00
Key words	Travel-time tomography, wide-angle seismic data, multichannel seismic data, gravity modelling, rifting, back-arc, subduction zones, earthquake dynamic rupture simulation, megathrust, tsunami		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
2021-2022	Severo Ochoa Postdoctoral Fellow, ICM, CSIC, Barcelona, Spain
2019-2021	Beatriu de Pinós Postdoctoral Fellow, ICM, CSIC, Barcelona, Spain
2019 (6 weeks)	Paternity leave
2016-2019	Postdoctoral Researcher at Irish Center for Research in Applied Geosciences, Ireland
2014-2016	Postdoctoral Reseracher at Dublin Institute for Advanced Studies, Ireland

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
<i>Phd in Geosciences (Cum Laude)</i>	<i>University of Barcelona</i>	2014
<i>Master in Geophysics</i>	<i>University of Barcelona/ University Ramon Llull</i>	2009
<i>Licensed in Geology</i>	<i>University of Barcelona</i>	2008

Part B. CV SUMMARY

My research interest focuses on the structure and formation processes of continental margins, and more recently on the main factors controlling the dynamic properties of megathrust earthquakes in subduction zones. To this end, I apply processing and modelling techniques to controlled-source seismic data sets, as well as gravity data, in order to derive the distribution of physical properties of the subsurface and integrate them into earthquake dynamic rupture numerical simulations. The training during my career has provided me with strong programming skills and an expertise in 2D/3D travel-time tomography using controlled-source seismic data. My most relevant research relates to the influence of elastic rock properties in the propagation of shallow megathrust earthquakes. Results from this research have been recently published in [Comm. Earth & Environment](#) (IF 7.9); [Science Advances](#) (IF 14.136), and



in the [Journal of Geophysical Research Solid Earth](#) (IF 3.848). These results validate a recent conceptual model published in [Nature](#), in which the depth-varying behavior of megathrust earthquake properties are mainly explained by the depth-distribution of elastic rock properties overlying the fault in the upper plate. My previous research focused on the structure of back-arc basins, in particular, the Tyrrhenian back-arc basin. These results set the foundations for an International Ocean Discovery Program (IODP) successful proposal, in which I am co-proponent, and that aims at drilling the basement of this Central-Mediterranean back-arc to explore the 3D time and space evolution of a continent-ocean transition next 2024 ([IODP expedition 402](#)). With 9 years after my PhD (2014), I have contributed to 27 publications, 22 in SCI journals, 17 of which are in Q1 (9 as first author). My H-index is 12 (Scopus), with 405 citations (Scopus). I received research funding from different public sources: In 2022 from Plan Nacional 2021 (50820 €); In 2021 from Severo Ochoa program linked to ICM, CSIC (50419,94€); In 2019 from Generalitat de Catalunya, Postdoctoral grant Beatriu de Pinós (2017BP00170) (92000 €); In 2009 from CSIC, PhD grant Jae-Predoc linked to project MEDOC (CTM2007-66179-C02-02) (84000€). I have participated in 17 research projects, and participated in 8 marine geophysical surveys. I have been invited to international congresses (e.g. EGU) and research seminars at both European universities and research institutes. I have supervised 1 MSc thesis, 1 PhD thesis, and 1 PhD short-stay that led to two Q1 publications (Merino et al., [2021a](#); [2021b](#)). I have been involved in several teaching activities related to the acquisition, processing, and modelling of controlled-source seismic data. I have also co-organized 3 scientific sessions at the European Geoscience Union, General Assembly conference, and an international industry-oriented workshop. Finally, I have also been involved in 6 outreach activities during institutional open-doors, exhibition events, such as “[la festa de la ciencia](#)”, and [RTVE radio interviews](#).

Part C. RELEVANT MERITS

C.1. Publications

[Prada, M.](#), Bartolomé, R., Gras, C., Bandy, W. L., Dañobeitia, J.J. (2023). Trench-parallel ridge subduction controls upper-plate structure and shallow megathrust seismogenesis along the Jalisco-Colima margin, Mexico. *Commun. Earth. Environ.* 4, 53. <https://doi.org/10.1038/s43247-023-00705-9> (Q1)

Tomar, G., O'Reilly, B. M., [Prada, M.](#), Hardy, R., Bean, C. J., Singh, S. C., & Bérdi, L. (2022). Crustal and uppermost mantle structure of the Porcupine Basin west of Ireland from seismic and gravity methods. *Marine and Petroleum Geology*, 140, 105652. <https://doi.org/10.1016/j.marpetgeo.2022.105652> (Q1)

Merino, I., Ranero, C. R., [Prada, M.](#), Sallarès, V., Grevemeyer, I. (2021). The Rift and Continent-Ocean Transition Structure Under the Tagus Abyssal Plain West of the Iberia. *Journal of Geophysical Research: Solid Earth*, 126(11), <https://doi.org/10.1029/2021JB022629> (Q1)

[Prada, M.](#), Galvez, P., Ampuero, J-P., Sallarès, V., Sánchez-Linares, C., Macías, J., Peter, D. (2021). The influence of depth-varying elastic properties of the upper plate on megathrust earthquake rupture dynamics and tsunamigenesis. *Journal of Geophysical Research, Solid Earth*. <https://doi.org/10.1029/2021JB022328> (Q1)

Merino, I., [Prada, M.](#), Ranero, C. R., Sallarès, V., Calahorrano, A. (2021). The structure of the continent-ocean transition in the Gulf of Lions from joint refraction and reflection travel-time tomography. *Journal of Geophysical Research, Solid Earth*. <https://doi.org/10.1029/2021JB021711> (Q1)

Sallarès, V., [Prada, M.](#), Riquelme, S., Meléndez, A., Calahorrano, A., Grevemeyer, I., Ranero, C. R. (2021). Large slip, long duration and moderate shaking of the Nicaragua 1992 tsunami earthquake caused by low near-trench rock rigidity. *Science Advances*, DOI: 10.1126/sciadv.abg8659 (Q1)

[Prada, M.](#), Ranero, C.R., Sallarès, V., Grevemeyer, I., Roberto de Franco, Gervasi., A., Zitellini, N. (2020). The structure of Mediterranean arcs: new insights from the Calabrian Arc subduction system. *Earth and Planetary Science Letters*, v 548, <https://doi.org/10.1016/j.epsl.2020.116480> (Q1)



Prada, M., Lavoué, F., Saqab, M. M., O'Reilly, B. M., Lebedev, S., Walsh, J. J., Childs, C (2018) Across-axis variations in petrophysical properties of the North Porcupine Basin, offshore Ireland: new insights from long-streamer travelttime tomography. *Basin Research*, 00:1-18. doi:10.1111/bre.12308 (Q1)

Prada, M., Watremez, L., Chen, C. et al. (2017). Crustal strain-dependent serpentinisation in the Porcupine Basin, offshore Ireland. *Earth and Planetary Science Letters*, 474, 148-159. doi:10.1016/j.epsl.2017.06.040 (Q1)

Prada, M., Sallarès, V., Ranero, C. R., Vendrell, M. G., Grevemeyer, I., Zitellini, N., Franco, R. (2016). Spatial variations of magmatic crustal accretion during the opening of the Tyrrhenian back-arc from wide-angle seismic velocity models and seismic reflection images. *Basin Research*. doi: 10.1111/bre.12211 (Q1)

C.2. Congress

In the last 10 years, I have contributed to 98 congresses, workshops, and seminars, 35 as first author (19 as oral, and 16 as poster). The following contributions were invited:

Seminars & Workshops:

Title: The uppermost lithospheric structure of the Tyrrhenian Basin from controlled-source seismic data. **Evento:** Seminario institucional. **Host Institute/Research group:** Departamento de Ciencia, Roma Tre University. **Location:** Virtual. **Date:** 10/5/2021

Title: New insights into crustal- and basin-scale processes in the Porcupine Basin, offshore Ireland, from travel-time tomography of active-source seismic data. **Host Institute/Research group:** Barcelona Center for Subsurface Imaging. **Event:** Institutional Seminars. **Location:** Barcelona, Spain. **Date:** 8/2/2018

Title: Enhancing crustal and sedimentary structure of North Atlantic rift basins in hyperextended passive margins. **Host Institute/Research group:** University College Dublin. **Event:** SFI site visit day: iCRAG Review day. **Location:** Dublin, Ireland. **Date:** 15/6/2017

Title: Nature of the basement in the Tyrrhenian. **Host Institute/Research group:** ISMAR, CNR. **Event:** IODP MagellanPlus Workshop link to project TIME. **Location:** Bologna, Italy. **Date:** 5-7/6/2017

Title: Seismic evidence of spatially variable magmatic crustal accretion during the opening of the Tyrrhenian back-arc Basin. **Host Institute/Research group:** Centre for Earth Evolution and Dynamics. **Event:** Institutional Seminars. **Location:** Oslo, Norway. **Date:** 16/3/2017

Conferences:

M. Prada, Sallares, V., Calahorrano, A., Ranero, C.R., Grevemeyer, I., Zitellini, N., CHIANTI scientific party. **Title:** The structure of the Calabrian subduction system from the fore-arc to the back-arc: new insights from wide-angle seismic data. **Event:** EGU General Assembly. **Location:** Vienna, Austria. **Date:** 12/4/2018

M.Prada; L.Watremez; C.Chen; et al. **Title:** Deep structure of the Porcupine Basin from seismic refraction data modelling. **Event:** Atlantic Ireland Conference 2016 (organised by the Petroleum Infrastructure Programme). **Location:** Dublin, Ireland. **Date:** 1/11/2016

M.Prada; L.Watremez; C.Chen; et al. **Title:** An integrated geophysical and geological study of the Porcupine Basin. **Event:** Atlantic Ireland Conference 2015 (organised by the Petroleum Infrastructure Programme). **Location:** Dublin, Ireland. **Date:** 27/10/2015

Organization of research events:

EGU General Assembly 2022 Session: "TS4.1. Active Tectonics and Geodynamics of the Mediterranean Region". **Location:** Viena, Austria. **Date:** 25/5/2022

EGU General Assembly 2019 session: "TS9.3 The impact of mantle serpentinization on the evolution of rifted margins, oceanic ridges & subduction zones: new insights from geophysical & petrological observations, & numerical/analogue modelling". **Location:** Viena, Austria. **Date:** 9/4/2019

EGU General Assembly 2019 session: "TS11.4/SM4.05 Unravelling the Earth subsurface structure from seismic imaging and interpretation, geological observations, and numerical experiments". **Location:** Viena, Austria. **Date:** 8-13/4/2018

Industry-oriented workshop on the Porcupine Basin. **Location:** Dublin Institute for Advanced Studies (DIAS), Ireland. **Date:** 26-27/7/2016

C.3. Research projects



2024 [IODP expedition 402](#). Title: Tyrrhenian Continent-Ocean Transition (TIME). Source of funding: [IODP](#), PI: Nevio Zitellini & Alberto Malinverno. Position held/Duties: [Co-proponent](#).

2023 [Eurofleets+ survey](#). Title: Seismic Hazard in the west Peloponnese – Ionian Islands Domain (POSEIDON) (12000€). Source of funding: [Eurofleets+](#), Funded Institute/Group: BCSI, CSIC. PI: Cesar R. Ranero, Position held/Duties: Co-proponent.

2022-2023. Title: Fuentes tsunamigénicas en el sur de la península Ibérica (THREAT) (50820 €). Source of funding: Plan Nacional 2021 - Subprograma estatal de generación de conocimiento 2021-2023. Funded Institute/Group: BCSI, CSIC, ICM. PI: Sara Martínez-Loriente & **Manel Prada**. Position held/Duties: Co-PI.

2021-present. Title: Estructura de la corteza y manto en las Islas Canarias integrando observaciones en el fondo marino (GUANCHE) (135.000€). Source of funding: Plan Nacional 2020 - Programa estatal de I+D+I orientada a los retos de la sociedad 2017-2020. Funded Institute/Group: BCSI, ICM, CSIC. PI: Antonio Villaseñor & Rafael Bartolomé. Position held/Duties: Deployment of ocean bottom seismometers.

2019-2021. Title: EXploring The effects of depth-dependent Rock properties on Earthquake propagation and tsunami generation (EXTREME) (92000€). Source of funding: Beatriu de Pinós postdoctoral programme of the Government of Catalonia's Secretariat for Universities and Research of the Ministry of Economy and Knowledge (Ref # 2017BP00170). Funded Institute/Group: BCSI, ICM, CSIC. PI: **Manel Prada**. Position held/Duties: PI.

2017-2020. Title: An integrated study of the Hatton Basin: its role in regional North Atlantic petroleum systems (HC4.2PH9) (140.309 €). Source of funding: Irish Centre for Research in Applied Geosciences (iCRAG). Funded Institute/Group: Dublin Institute for Advanced Studies (DIAS), PI: B. M. O'Reilly, Position held/Duties: Co-supervisor of the corresponding PhD student, Laura Berdi.

2016-2020. Title: Formación de los dominios geológicos en el Margen SO de Iberia y reactivación sus límites tectónicos (FRAME) (207.000€). Source of funding: Plan Nacional I+D+I/Retos. Funded Institute/Group: BCSI, ICM, CSIC. PI: Cesar R. Ranero & Valentí Sallarès. Position held/Duties: Research collaborator in the original project and participation in the acquisition of marine seismic data.

2016-2020. Title: Enhancing crustal and sedimentary structure of North Atlantic rift basins in hyperextended passive margins (HC4.2PD3) (277.552 €). Source of funding: Irish Centre for Research in Applied Geosciences (iCRAG). Funded Institute/Group: DIAS, PI: B. M. O'Reilly, Position held/Duties: main postdoctoral Researcher.

2014. Title: Caracterización del peligro sísmico y tsunamigénico asociado con la estructura cortical del contacto Placa de Rivera-Bloque de Jalisco (TSUJAL) (CGL2011-29474-C02-01) (302.500€). Source of funding: Ministerio de Ciencia e Innovación (MICINN). Funded Institute/Group: BCSI, ICM, CSIC, PI: Diego Cordoba & Rafael Bartolomé. Position held/Duties: Acquisition, processing and modelling of WAS data.

C.4. Contracts, technological or transfer merits

2014-2016. Industry-funded contract. Title: Integrated geophysical and geological studies in the Porcupine Basin (IS13/13) (352.627€). Source of funding: Department of Communication, Climate Action and Environment, Ireland & Petroleum Infrastructure Programme. Funded Institute/Group: Dublin Institute for Advanced Studies (Dublin, Southern and Eastern, Ireland), PI: B. M. O'Reilly & Timothy A. Minshull (University of Southampton, UK), Position held/Duties: postdoctoral researcher

2014. Industry-funded contract. Title: CODOS (>2Ma€). Source of funding: REPSOL. Funded Institute/Group: Barcelona Center for Subsurface Imaging (ICM, CSIC). PI: Cesar R. Ranero. Position held/Duties: postdoctoral researcher