

## **PhD Position in Marine Seismology – Project DESTINY**

### **1. Project Description**

DESTINY (Detailed Structure and Inter-plate Geometry of the Ecuadorian Subduction System) aims to understand how variations in rock rigidity and fault roughness influence megathrust earthquake dynamics and tsunami generation. Building on previous award-winning studies by our group (Nature, Ciutat de Barcelona Prize 2020), the project will apply advanced seismic imaging and 3D tomography modelling (JRRTT) developed by our research team to image the Ecuadorian subduction zone with unprecedented resolution. The research integrates seismic imaging, rupture modelling, and tsunami simulations to investigate the role of geological heterogeneity in controlling earthquake rupture and tsunami potential. DESTINY is an international collaboration involving institutions from Spain, France (Géoazur), Germany (GEOMAR, LMU Munich), and Ecuador (IG-EPN, INOCAR), contributing to global efforts within the UNESCO Ocean Decade and the Sendai Framework for Disaster Risk Reduction.

### **2. The Offer**

We offer a fully funded PhD position under the PIF 2025 program (Personal Investigador en Formación), based at the Institute of Marine Sciences (ICM-CSIC) in Barcelona.

Start date: Between January and March 2026

Salary: ~19,000 € (1st year) and ~23,500 € (2nd–4th years) gross annual

Duration: 3–4 years

Location: ICM-CSIC, Passeig Marítim de la Barceloneta 37–49, Barcelona, Spain

The selected student will participate in oceanographic campaigns, perform seismic data analysis, and conduct international research stays at Géoazur (France) and LMU Munich (Germany). The training includes advanced seismic imaging and 3D tomography modelling, earthquake rupture analysis, and tsunami hazard assessment, leading to high-impact publications and presentations at major conferences (EGU, AGU).

### **3. Candidates**

Applicants should hold a degree in Geology, Geophysics, Physics, Marine Sciences, or a related discipline, and a Master's degree (preferably in Geophysics) by the time of enrollment.

Desirable skills:

- Programming and data analysis
- Strong written and oral communication in English
- Experience in geophysics, seismology, or marine sciences

Applications must include a CV and a motivation letter describing the candidate's research interests and motivation for pursuing this project. Please send your application to [rafael@icm.csic.es](mailto:rafael@icm.csic.es) before the official deadline.

### **4. Our Team**

The Barcelona Center for Subsurface Imaging (BCSI) at ICM-CSIC is an internationally recognized group specializing in the acquisition, processing, and modeling of marine

geophysical data, particularly controlled-source seismics. Our team combines strong expertise with a collaborative, international environment that provides outstanding conditions for doctoral training.

ICM-CSIC, a Severo Ochoa Centre of Excellence, is Spain's leading marine research institute and one of the most multidisciplinary centers in Southern Europe. Our mission is to develop excellent and socially relevant ocean science, aligned with the United Nations Decade of Ocean Science for Sustainable Development (2021–2030).

For more information, visit: <https://www.icm.csic.es/es/grupo-investigacion/barcelona-center-subsurface-imaging>