

Towards an Open Access European Database for Deep Seismic Sounding Data

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1. DSS project database

- Data represents a solid base to move science towards wisdom and novelty.
- Deep Seismic Sounding (DSS) data provides critical information of the crust and lithosphere, is the base of Solid Earth Sciences and results from a huge scientific effort among different institutions. Thus, DSS data needs to be preserved.
- To develop a prototype for DSS data access, seismic datasets are assigned a DOI, following the FAIR principles of data management: Findable, Accessible, Interoperable and Reusable.



1. DSS project database

- EPOS (European Plate Observation System) and SERA (Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe) are international projects that offer data access in Solid Earth Sciences and specifically, in seismology. To create a “project database” within the EPOS metadata system, we have:
 - Collated a list of DSS projects (ECORS, ESCI, DEKORP, TRANSALP, HIRE, URSEIS, EUROBRIDGE, EUGENO, etc.) and metadata in existing databases (OpenFIRE, CSIC and BIRPS).
 - Contributed to inform the DSS community on the SERA objectives and included the community in the discussions.
 - Communicated with international specialists on control source seismic exploration.

These discussions have significantly contributed to our roadmap. However, engagement of the DSS community will be still needed to proceed in the future.



Several PetaBytes of solid Earth Science data will be available
Several thousands of users expected to access the infrastructure

<https://www.epos-ip.org/>



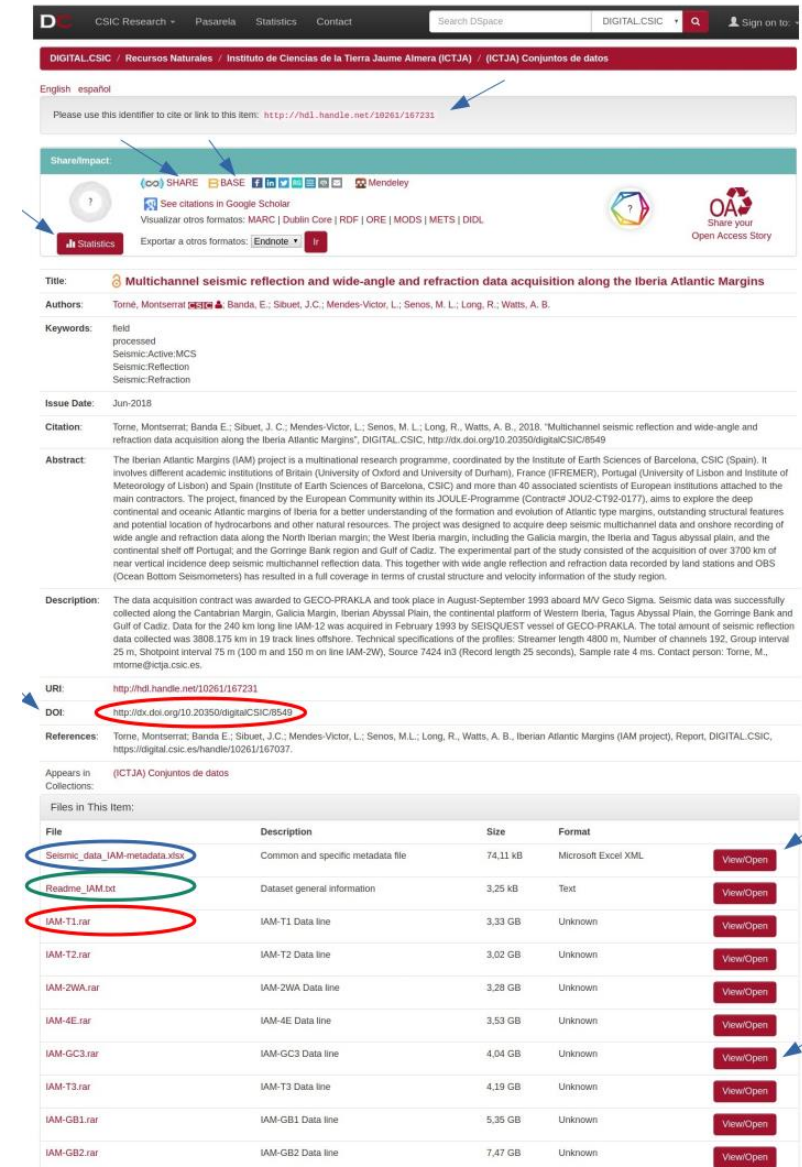
<http://www.sera-eu.org/en/home/>



2. Prototype: ICTJA-CSIC seismic database

- Digital.CSIC hosts an online repository where scientific data and data products are freely available.
- The Institute of Earth Sciences Jaume Almera (ICTJA) and digital.CSIC have encouraged a database of DSS data. CSIC aims to treat current dataset as published papers through DOI and handle.
- The ICTJA-CSIC seismic database includes normal-incidence and wide-angle DSS data acquired both onshore and offshore. They sample different geological settings at different scales.
- Seismic data are available in:
<https://digital.csic.es/handle/10261/101879>

Iberian Atlantic Margin (IAM) dataset



DIGITAL.CSIC / Recursos Naturales / Instituto de Ciencias de la Tierra Jaume Almera (ICTJA) / (ICTJA) Conjuntos de datos

English español

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Title: Multichannel seismic reflection and wide-angle and refraction data acquisition along the Iberia Atlantic Margins

Authors: Torne, Montserrat; Banda, E.; Sibuet, J.C.; Mendes-Victor, L.; Senos, M. L.; Long, R.; Watts, A. B.

Keywords: field processed Seismic:Active MCS Seismic:Reflection Seismic:Refraction

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Citation: Torne, Montserrat; Banda, E.; Sibuet, J. C.; Mendes-Victor, L.; Senos, M. L.; Long, R.; Watts, A. B., 2018. "Multichannel seismic reflection and wide-angle and refraction data acquisition along the Iberia Atlantic Margins", DIGITAL.CSIC, <http://dx.doi.org/10.20350/digitalCSIC/6549>

Abstract: The Iberian Atlantic Margins (IAM) project is a multinational research programme, coordinated by the Institute of Earth Sciences of Barcelona, CSIC (Spain). It involves different academic institutions of Britain (University of Oxford and University of Durham), France (IFREMER), Portugal (University of Lisbon and Institute of Meteorology of Lisbon) and Spain (Institute of Earth Sciences of Barcelona, CSIC) and more than 40 associated scientists of European institutions attached to the main contractors. The project, financed by the European Community within its JOULE-Programme (Contract# JOU2-CT92-0177), aims to explore the deep continental and oceanic Atlantic margins of Iberia for a better understanding of the formation and evolution of Atlantic type margins, outstanding structural features and potential location of hydrocarbons and other natural resources. The project was designed to acquire deep seismic multichannel data and onshore recording of wide angle and refraction data along the North Iberian margin, the West Iberia margin, the Iberia and Teguys abyssal plain, and the continental shelf off Portugal; and the Gorringe Bank region and Gulf of Cadiz. The experimental part of the study consisted of the acquisition of over 3700 km of near vertical incidence deep seismic multichannel reflection data. This together with wide angle reflection and refraction data recorded by land stations and OBS (Ocean Bottom Seismometers) has resulted in a full coverage in terms of crustal structure and velocity information of the study region.

Description: The data acquisition contract was awarded to GEOCO-PRAKLA and took place in August-September 1993 aboard MY Geoco Sigma. Seismic data was successfully collected along the Cantabrian Margin, Galicia Margin, Iberian Abyssal Plain, the continental platform of Western Iberia, Tagus Abyssal Plain, the Gorringe Bank and Gulf of Cadiz. Data for the 240 km long line IAM-12 was acquired in February 1993 by SEISQUEST vessel of GEOCO-PRAKLA. The total amount of seismic reflection data collected was 3808.175 km in 19 track lines offshore. Technical specifications of the profiles: Streamer length 4800 m, Number of channels 192, Group interval 25 m, Shotpoint interval 75 m (100 m and 150 m on line IAM-2W), Source 7424 in3 (Record length 25 seconds), Sample rate 4 ms. Contact person: Torne, M., mtorne@ictja.csic.es.

URI: <http://hdl.handle.net/10261/167231>

DOI: <http://dx.doi.org/10.20350/digitalCSIC/6549>

References: Torne, Montserrat; Banda, E.; Sibuet, J.C.; Mendes-Victor, L.; Senos, M.L.; Long, R.; Watts, A. B., Iberian Atlantic Margins (IAM project), Report, DIGITAL.CSIC, <https://digital.csic.es/handle/10261/167037>.

Appears in Collections: (ICTJA) Conjuntos de datos

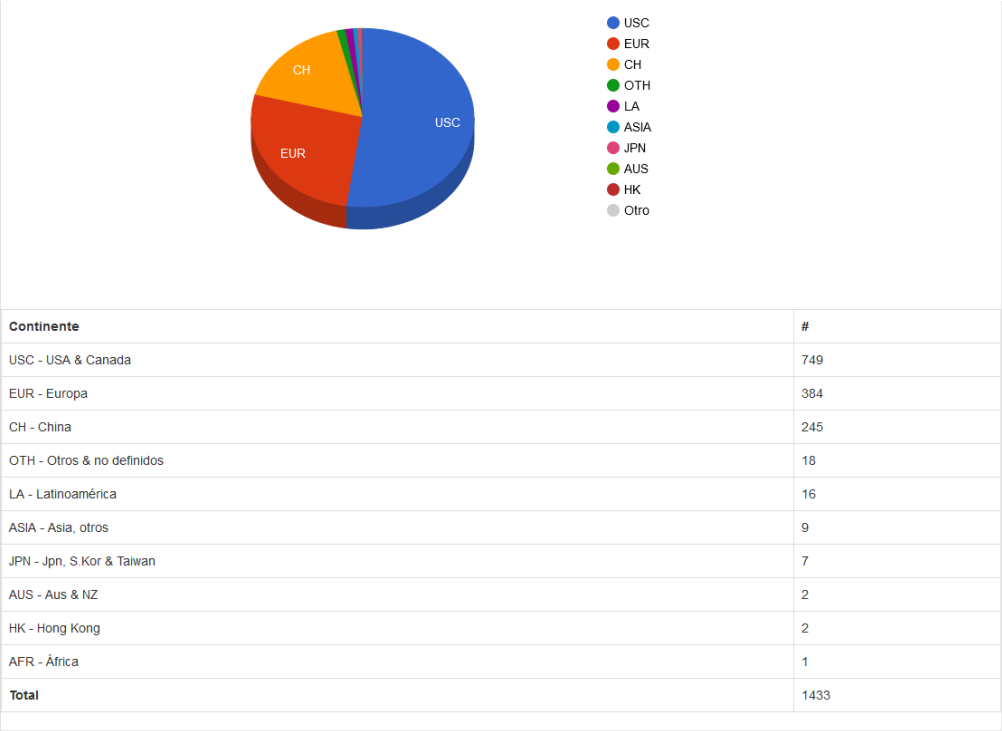
Files in This Item:

File	Description	Size	Format	View/Open
Seismic_data_IAM-metadata.xlsx	Common and specific metadata file	74.11 kB	Microsoft Excel XML	View/Open
Readme_IAM.txt	Dataset general information	3.25 kB	Text	View/Open
IAM-T1.rar	IAM-T1 Data line	3.33 GB	Unknown	View/Open
IAM-T2.rar	IAM-T2 Data line	3.02 GB	Unknown	View/Open
IAM-2WA.rar	IAM-2WA Data line	3.28 GB	Unknown	View/Open
IAM-4E.rar	IAM-4E Data line	3.53 GB	Unknown	View/Open
IAM-GC3.rar	IAM-GC3 Data line	4.04 GB	Unknown	View/Open
IAM-T3.rar	IAM-T3 Data line	4.19 GB	Unknown	View/Open
IAM-GB1.rar	IAM-GB1 Data line	5.35 GB	Unknown	View/Open
IAM-GB2.rar	IAM-GB2 Data line	7.47 GB	Unknown	View/Open

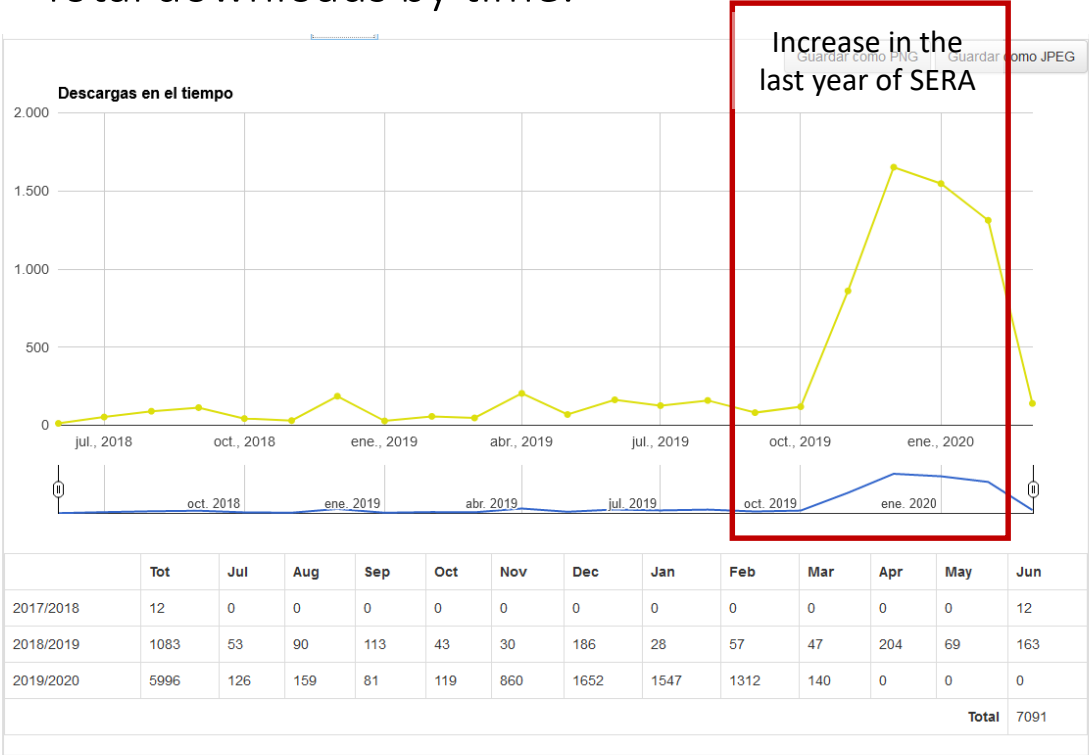


2. Prototype: ICTJA-CSIC seismic database

- Total downloads by region:



- Total downloads by time:



3. Future perspective of DSS data

- A continued collaboration of the DSS community is needed to move towards an open access DSS database.
- Digital.CSIC provides a great advance into the dissemination of the research data and results following the FAIR principles and is able to generate DOIs for different formats of datasets. It provides the infrastructure to accomplished the open access legal requirements.
- An open access database aims to facilitate knowledge discovery, to improve research transparency and to spread science for research, education and industry.

