



# CALL FOR APPLICATIONS

for scientists based in ECORD Member Countries to participate in

## **IODP Expedition 386: Japan Trench Paleoseismology**

An IODP Mission Specific Platform Expedition organised by the

**ECORD Science Operator (ESO)**

and jointly implemented with

**The Institute for Marine-Earth Exploration and Engineering (MarE3) within the Japan Agency for  
Marine-Earth Science and Technology (JAMSTEC)**

**MarE3**

[www.ecord.org](http://www.ecord.org) / [www.jamstec.go.jp/chikyu/e/](http://www.jamstec.go.jp/chikyu/e/)



**DEADLINE 5 July 2019**

Applications are invited from scientists in countries participating in IODP to join the Science Party for IODP Expedition 386: Japan Trench Paleoseismology. Any scientist from an IODP member country with expertise relevant to the objectives of the proposal may apply.

The proposal upon which this expedition is based was submitted as IODP Proposal #866 'Japan Trench Paleoseismology', subtitle '*TRACKing past earthquakes in the sediment record along the Japan Trench: Testing and developing submarine Paleoseismology in the deep sea (JTRACK-Paleoseismology)*'.

The proposal describing the primary coring sites, as well as up-to-date expedition information, can be found on the Expedition 386 webpage <http://www.ecord.org/expedition386/>.

The Co-chief Scientists for this Expedition are Prof. Michael Strasser (University of Innsbruck, Austria) and Dr. Ken Ikehara (Geological Survey of Japan, AIST).

### **Background and Objectives**

Expedition 386 aims to test and develop "submarine paleoseismology" in the Japan Trench, a promising approach that overcomes the limitations of short historical and instrumental records in revealing earthquake maximum magnitude and recurrence. Examining prehistoric events preserved in the geological record is essential to reconstruct the long-term history of earthquakes and to deliver observational data that help to reduce epistemic uncertainties in seismic hazard assessment for long return periods.



Expedition 386 will adopt a multi-coring approach using a mission-specific platform equipped with a giant piston corer to sample the shallow-subsurface at up to 40 mbsf to recover the continuous

Upper Pleistocene to Holocene stratigraphic successions of trench-fill basins along an axis-parallel transect of the 7-8km deep Japan Trench. The cores from 18 proposed primary

(and/or 13 alternate) sites will be used for multi-method applications to characterize event deposits, for which the detailed stratigraphic expressions and spatio-temporal distribution will be analysed for proxy evidence of earthquakes.

Expedition 386 can potentially lead to a fascinating record unravelling an earthquake history that is 10 to 100 times longer than currently available. This would contribute to a tremendous advance in the understanding of the recurrence pattern of giant earthquakes and earthquake-induced geohazards globally.

The project has three major objectives:

1. To identify the sedimentological, physical, chemical, and biogeochemical proxies of event-deposits in the sedimentary archive that allow for confident recognition and dating of past Mw9-class earthquakes vs. smaller earthquakes vs. other driving mechanisms.
2. To explore the spatial and temporal distribution of such event-deposits to investigate along-strike and time-dependant variability of sediment sources, transport and deposition processes, and stratigraphic preservation.
3. To develop a long-term earthquake record for giant earthquakes.

### **Platforms, locations and timing**

Until the Expedition 386 platforms are confirmed, all timings are provisional.

The mission-specific platform for this expedition will be the JAMSTEC-operated Research Vessel *Kaimei*, which is equipped with its own 40m giant piston corer. The R/V *Kaimei* will be mobilised and demobilised at ports to be decided in Japan.

At this time, it is envisaged that the offshore phase of Expedition 386 will take place on the R/V *Kaimei* for up to 50 days in spring and/or summer of 2020 (Apr-Aug, please watch the Expedition 386 webpage for schedule updates, <http://www.ecord.org/expedition386/>).

Only a subset of the Science Party will participate offshore. Offshore activities will focus on core recovery, curation, sampling for ephemeral properties, physical properties, and preliminary lithostratigraphy and biostratigraphy (through liner and/or on core catcher samples). The cores will be sectioned offshore, but will not be not opened or split.

Subsequently, an Onshore Science Party (OSP) will be held on board the JAMSTEC-operated Drilling Vessel *Chikyu*, which will be docked in the Port of Shizuoka, Japan. The OSP is expected to last a maximum of 30 days in the period October to November 2020, the exact length will be dependent on core recovery.



During the OSP, the cores will be split and IODP Mission-Specific Platforms Standard Measurements taken. All members of the Science Party must attend the Onshore Science Party.

Please see <http://www.ecord.org/expeditions/msp/> (and linked pages within) for an overview of Mission Specific Platforms in IODP. *Please note that the Expedition 386 OSP will be held onboard the D/V Chikyu. The link above refers to our usual OSP location at the Bremen Core Repository, located at the University of Bremen in Germany. However, the same OSP principles will still apply.*

Successful applicants will be invited either as an offshore-onshore participant, or as an onshore-only participant. Please note that there are no opportunities for offshore-only participation.

### Expertise sought

Opportunities exist for researchers (including graduate students) in all specialties. While other expertise may be considered, specialists in the following fields are required: **sedimentology** (with special focus on deep-water and hadal trench depositional environments, sediment fabrics, and X-ray computed tomography), **event stratigraphy**, **micropaleontology** (including expertise with siliceous microfossils and benthic foraminifera), **tephra stratigraphy**, **paleomagnetism**, **stratigraphic correlation**, **organic geochemistry**, **inorganic geochemistry**, **physical properties**, **geophysics**, **paleoseismology**, **structural geology**, and **microbiology**. For the offshore phase of the expedition, we are particularly looking for the following fields: **sedimentology**, **micropaleontology**, **organic geochemistry**, **inorganic geochemistry**, **physical properties**, **event stratigraphy**, **stratigraphic correlation**, **geophysics** and **microbiology**.

### Information webinar

To learn more about the scientific objectives of this expedition, life at sea, and how to apply to sail, please join us for a web-based seminar on **Thursday 20 June 2019** at 12pm GMT.

To participate in the webinar, you will need access to the internet with a computer equipped with a speaker and microphone (optional). To register, please visit:

<https://www.surveymonkey.co.uk/r/BPM3D3F>

Please note that places are limited to 100, and the webinar link will be e-mailed to the first 100 registrants.



**The Application Process** is open to scientists in all ECORD member countries. Please download the *Apply to Sail* general application forms from the ESSAC webpage:

<http://www.ecord.org/expeditions/apply-to-sail/>

Please, fill out all applicable fields and send it to the ESSAC office by email ([essac@plymouth.ac.uk](mailto:essac@plymouth.ac.uk)) with the following additional documents by the deadline of **5 July 2019**:

1. **A letter of interest** outlining your specific expertise, previous involvement in DSDP/ ODP/ IODP expeditions, research interests, primary research goals of your proposed participation.
2. **CV and publication list.**
3. **Young researchers** must additionally provide a **letter of support** from their host institution, including information on post-cruise science support.

All applications should state how you intend to achieve your proposed scientific objectives, with information on the funding scheme and support from your institution or national funding agencies. More information can be found under: <http://www.ecord.org/expeditions/apply-to-sail/>

In addition to the ESSAC application, all applicants *must inform their national office or national delegate* and send them a copy of their application documents. The national offices or national delegates can also provide information regarding travel support, post-cruise funding opportunities, etc.

See <http://www.ecord.org/about-ecord/about-us/> for a list of the national contact persons.

**For further information or questions, please contact the ESSAC Office:**

**ECORD Science Support & Advisory Committee**

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