Cruise Summary

1. Cruise Information

(1) **Cruise ID:** YK21-14

(2) **Vessel:** S/V YOKOSUKA

(3) **Cruise Title**

High-resolution research of marine seismogenic faults in wide area: Seismic survey and earthquake observation

(4) **Chief Scientist**

Ryuta Arai (JAMSTEC)

(5) **Representative of the Science Party**

P21-08 Seiichi Miura (JAMSTEC)

(6) **Research Titles**

P21-08 High-resolution research of marine seismogenic faults in wide area: Seismic survey and earthquake observation

(7) **Cruise Period**

2021/08/06 - 2021/08/16

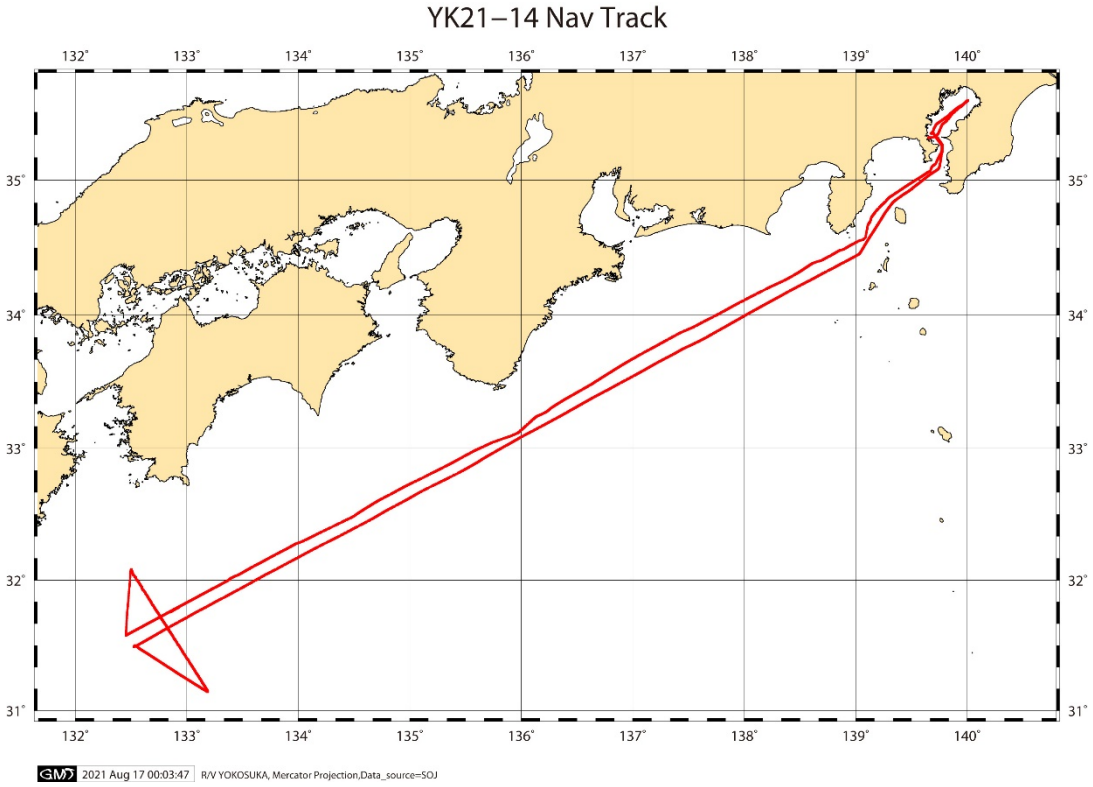
(8) **Ports of departure/call/arrival**

Yokosuka - Yokosuka

(9) **Research Area**

Hyuga-nada, Nankai Trough

(10) **Cruise Track**



2. Overview of the Observation

The cruise YK21-14 aims at revealing three-dimensional geometry and physical properties of faults in the Nankai Trough region as described in the mid-term to long-term research plan of JAMSTEC. In the survery area ranging from the westernmost part of the Nankai Trough to the Hyuga-nada area, the plate coupling condition changes rapidly in the along-trough direction, and slow earthquakes including slow slip events and very low freuqency earthquakes occur at the shallow and deep parts of the subduction zones. To reveal structural controls on the variety of slip behaviors, we carry out a seismic refraction survey. For this survey, we deployed one hundred short-period ocean bottom seismographs (OBS) on the along-trough and across-trough profiles during this cruise.

In addition, we deployed one ocean bottom electromagnetometer (OBEM). This operation was proposed by Nagoya University at the second symposium for science cruises of Research Institute for Marine Geodynamics. The OBEM deployment was also a part of the collaborative research between JAMSTEC and Nagoya University entitled "Science of Hyuga-nada seismogenic zone".