



Yokosuka Cruise Report

YK21-12C

Experiments of Time Reversal MIMO Acoustic Communication

Fukushima offshore

July 13, 2021 – July 25, 2021

Japan Agency for Marine-Earth Science and Technology

(JAMSTEC)

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1. Cruise Information

Cruise ID: YK21-12C

Name of vessel: Yokosuka

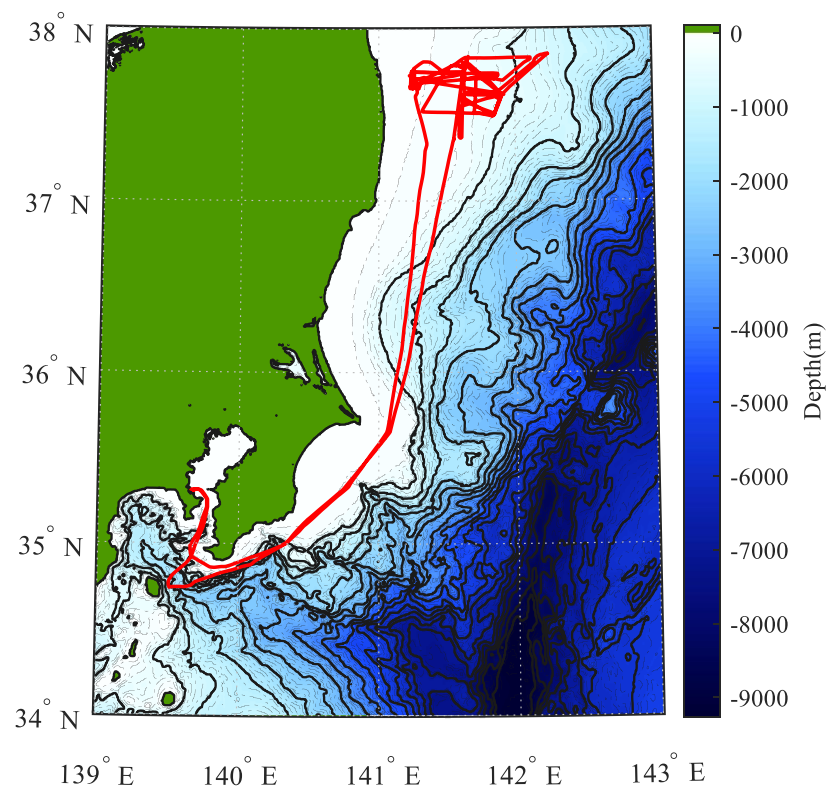
Title of the cruise: Experiments of time reversal MIMO acoustic communication

Cruise period: July 13, 2021 – July 25, 2021

Ports of departure / call / arrival: Yokosuka (Nissan) – Yokosuka (JAMSTEC)

Research area: Fukushima Offshore

Research Map:



2. Researcher

Chief Scientist

Takuya SHIMURA [JAMSTEC]

Science Party

Mitsuyasu DEGUCHI [JAMSTEC]

Kenjiro OKADOME [JAMSTEC]

Seiji KUROSAKI [Nippoe Denshi Ltd.]

Hiroki MIYATA [Nippoe Denshi Ltd.]

Shuichiro TERADA [Shoshin Corp.]

Ryutaro YAMAO [Shoshin Corp.]

Mitsuko HORAI [Shoshin Corp.]

3. Observation

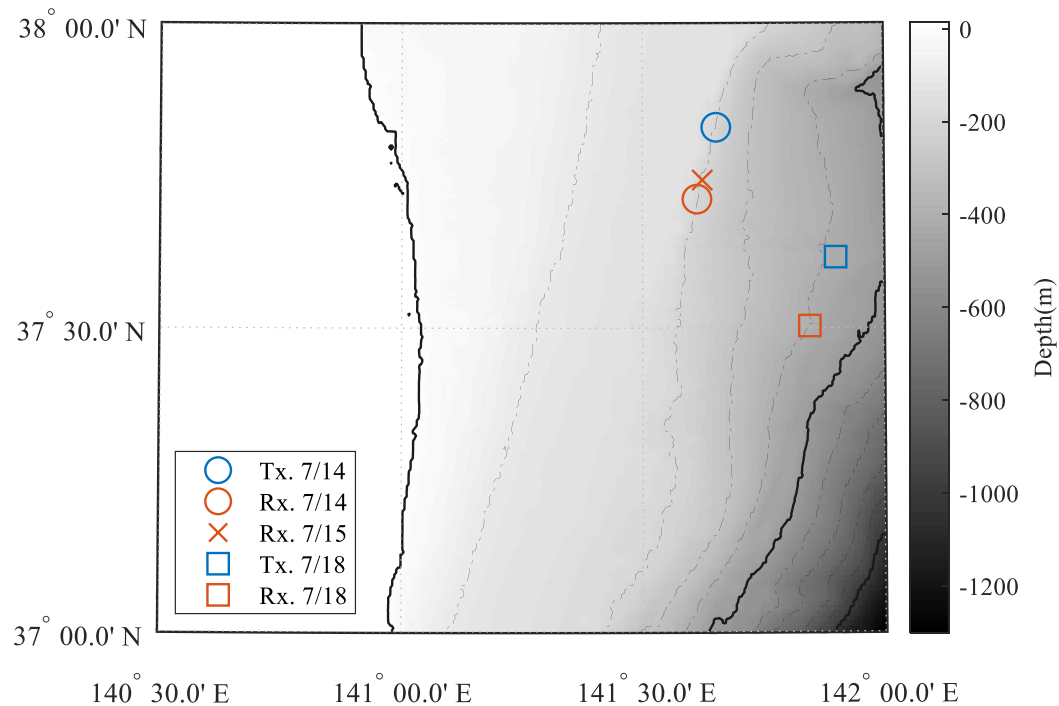
(1) Objectives

This cruise was a part of the research on MIMO acoustic communication using time reversal. The experiments were carried out in Fukushima offshore of water depth from 200 to 400 m. The characteristic of acoustic channel in this area was measured in the previous cruise, KR20-03C/YK20-04C, YK20-11C. In this cruise, a 6 channel transmitter array and twenty-four-channel receiver array were moored and MIMO communication experiments were carried out.

(2) Cruise log

2021/7/13	Departure from Yokosuka
2021/7/14	Deployment of Tx and Rx arrays (mooring)
2021/7/15	Recovery of Rx array and deployment Rx array (mooring)
2021/7/16	Recovery of Rx array
2021/7/17	Recovery of Tx array
2021/7/18	Deployment of Tx and Rx arrays (mooring)
2021/7/19	Evacuation due to abysmal weather
2021/7/20	Recovery of Tx array
2021/7/21	Recovery of Rx array
2021/7/22	Evacuation due to abysmal weather
2021/7/23	Evacuation due to abysmal weather
2021/7/24	Evacuation due to abysmal weather
2021/7/25	Arrival at Yokosuka

(3) Measurements



	Transmitter		Receiver Array	
2021/07/14	37°49.82'N	141°39.20'E	37°42.73'N	141°36.80'E
2021/07/15			37°44.61'N	141°37.48'E
2021/07/18	357°36.96'N	141°54.06'E	37°30.19'N	141°50.80'E

4. Notice on Using

This cruise report is a preliminary documentation as of the end of cruise.

This report is not necessarily corrected even if there is any inaccurate description (i.e. taxonomic classifications). This report is subject to be revised without notice. Some data on this report may be raw or unprocessed. If you are going to use or refer the data on this report, it is recommended to ask the Chief Scientist for latest status.

Users of information on this report are requested to submit Publication Report to JAMSTEC.

<http://www.godac.jamstec.go.jp/darwin/explain/1/e#report>

E-mail: submit-rv-cruise@jamstec.go.jp