



Mirai, Yokosuka Cruise Reports
MR22-01C/YK22-02C

Experiments of
Time Reversal MIMO Acoustic Communication

The coast of Kochi

Mirai	Jan.24,2022-Feb.1,2022
Yokosuka	Jan.24,2022-Feb.2,2022

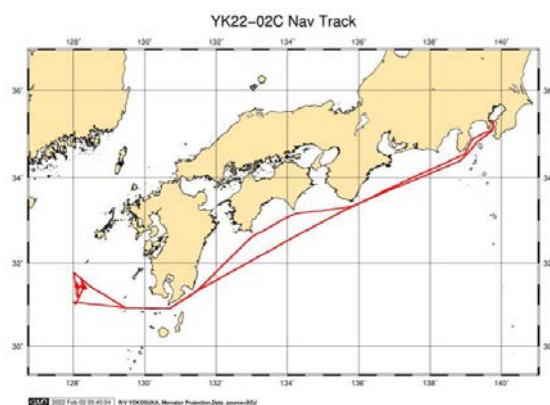
Japan Agency for Marine-Earth Science and Technology
(JAMSTEC)

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1. Cruise Information

Cruise ID	: MR22-01C, YK22-02C		
Name of vessel	: Mirai, Yokosuka		
Title of cruise	: Experiments of Time Reversal MIMO Acoustic Communication		
Chief Scientist	: Mirai	Takuya SHIMURA	[JAMSTEC]
	Yokosuka	Mitsuyasu DEGUCHI	[JAMSTEC]
Cruise period	: Mirai	Jan. 24, 2022 – Feb. 1, 2022	
	Yokosuka	Jan. 24, 2022 – Feb. 2, 2022	
Ports of departure / call / arrival:	Mirai	Shimizu – Shimizu	
	Yokosuka	Yokosuka – Yokosuka	
Research area	: Western area of Kyushu		
Research map			



2. Science Party

Mirai		
Chief Scientist	Takuya SHIMURA	[JAMSTEC]
Science Party	Kenjiro OKADOME	[JAMSTEC]
	Seiji KUROSAKI	[Nippoe Denshi Ltd.]
	Hiroki MIYATA	[Nippoe Denshi Ltd.]
Yokosuka		
Chief Scientist	Mitsuyasu DEGUCHI	[JAMSTEC]
Science Party	Kazuya TANAKA	[Nippoe Denshi Ltd.]
	Naomichi TANAKA	[Nippoe Denshi Ltd.]
	Shuichiro TERADA	[Shoshin Corp.]
	Ryutaro YAMAO	[Shoshin Corp.]
	Mitsuko HOURAI	[Shoshin Corp.]

3. Research Activities

(1) objective

This cruise was a part of the research on MIMO acoustic communication using time reversal. The experiments were carried out in the western area of Kyushu at a depth from 150 m to 400 m approximately. In this cruise, a transmitter system with 4 transducers and a receiver array with 24 channels were suspended and measurement of channel responses were carried out.

(2) Measurement

date	Mirai position		Yokosuka position	
Jan. 27th ,2022	31°22.7214'N	128°15.7767'E	31°25.0688'N	128°17.3350'E
Jan. 28th ,2022	31°20.3739'N	128°14.2197'E	31°25.0688'N	128°17.3350'E
Jan. 29th ,2022	31°30.3170'N	128°7.5178'E	31°27.9019'N	128°6.1076'E

4. Cruise Log

Jan. 24, 2022	Yokosuka Mirai	Departure from Yokosuka Departure from Shimizu
Jan. 25, 2022		Shifting to the western area of Kyushu
Jan. 26, 2022		Shifting to the western area of Kyushu
Jan. 27, 2022		Measurement of channel responses (suspended)
Jan. 28, 2022		Measurement of channel responses (suspended)
Jan. 29, 2022		Measurement of channel responses (suspended)
Jan. 30, 2022	Yokosuka Mirai	Shifting to Yokosuka Shifting to Shimizu
Jan. 31, 2022	Yokosuka Mirai	Shifting to Yokosuka Shifting to Shimizu
Feb. 1, 2022	Yokosuka Mirai	Shifting to Yokosuka arrival of Shimizu
Feb. 2, 2022	Yokosuka	Arrival of Yokosuka

● 5. 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>

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