

Operation Plan and Current Status of CINDY2011

CINDY2011 : Cooperative Indian Ocean experiment on isv in the Year 2011

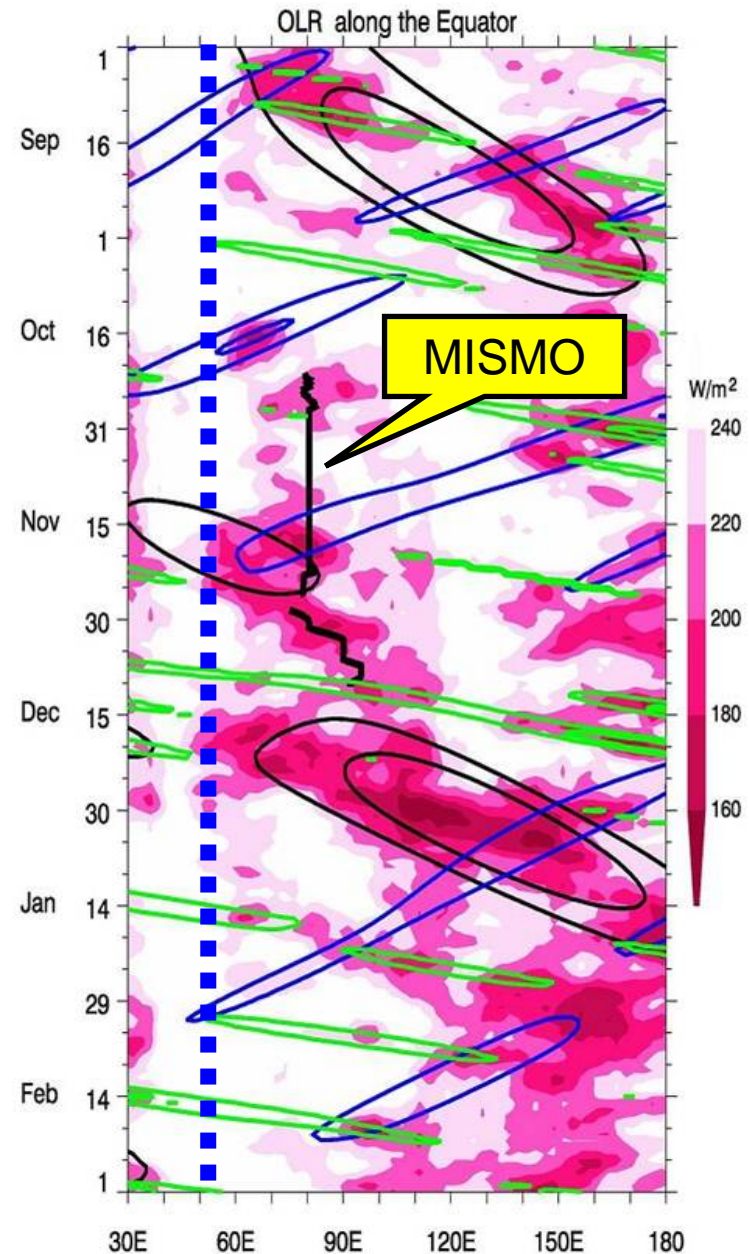
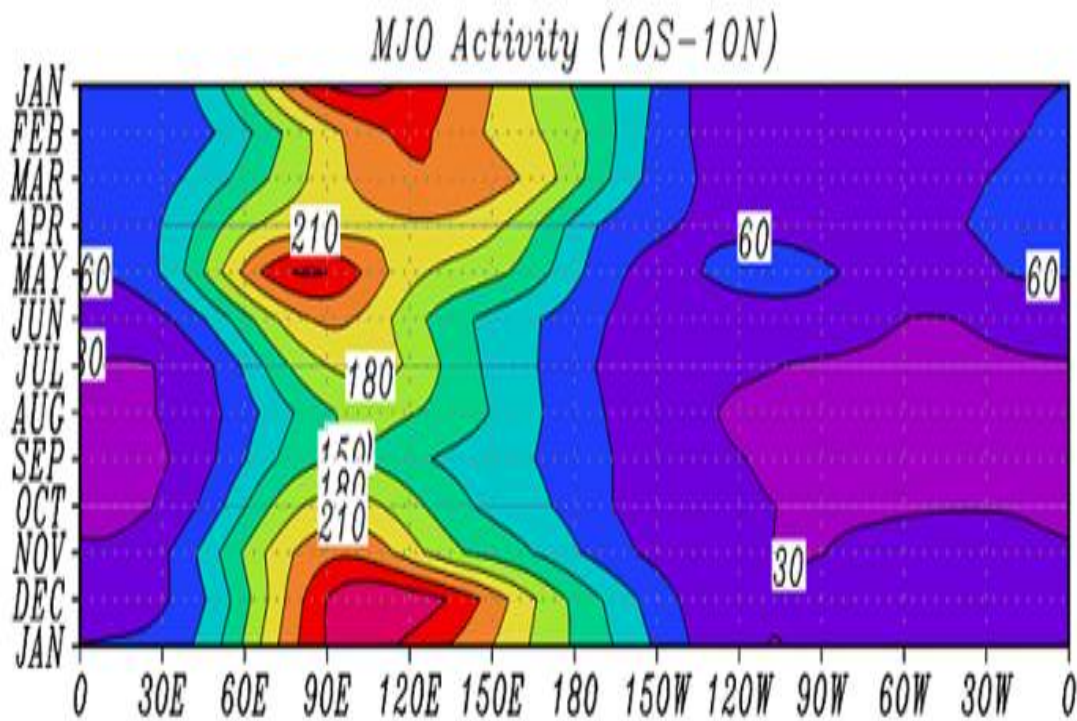
Kunio Yoneyama and Masaki Katsumata (JAMSTEC)

1. Basic Idea
2. Observation Network
3. Current Status

Purpose :

Study on Intraseasonal Variability in the Indian Ocean with focus on the initiation of convection in Madden-Julian Oscillation.

Scientific Background - Period & Location



Preference of MJO-convection Occurrence

Period : November - January

Location : 80E - 100E

(Above is convective center. Western edge of convective ensemble is often found around 60E)

Observation Plan - Basic Idea

Basic Strategy :

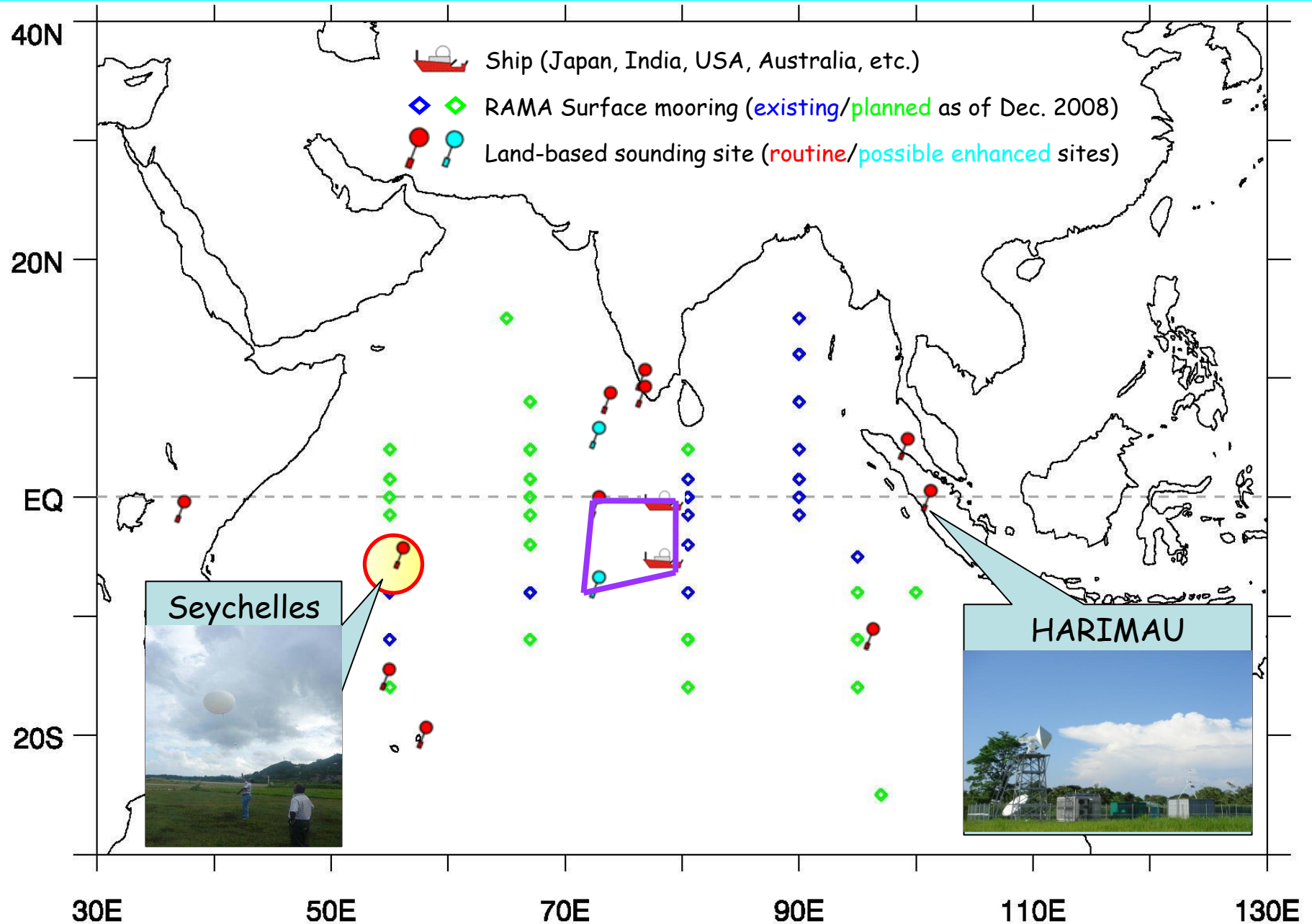
Based on the experience of MISMO, the key of the experiment is to construct a long-time (over intraseasonal period) and wider areal observation network with ships and land-based sites in collaboration with RAMA buoy array.

- * It should be appropriate to evaluate contribution from Rossby wave.
- * Multi-national effort (Japan, USA, Australia, India, Seychelles, Indonesia, France, ...)
- * Numerical group should be involved. (ex. NICAM)

Period : Oct. 2011 - Jan. 2012

Location : On and around the central equatorial Indian Ocean

Proposed Network for CINDY2011



Tentative Schedule of R/V Mirai

Oct. 10	leave	Japan
Oct. 20	call at	Singapore
Oct. 25	arrive	Observation point
Nov. ??	call at	Maldives (1-2 days)
Dec. 15	leave	Observation point
Dec. 19	arrive	Seychelles

About 50 days
on station

Dec. 20 leave Seychelles for WOCE-type cruise

Remarks.

1) Cruise consists of 2 legs

(Singapore ~ Maldives, Maldives ~ Seychelles)

2) Flexibility with maximum 2 weeks shift (backward or forward)

Observations on-board the R/V Mirai

Expected Measurement Systems to be used :

C-band Doppler radar

Radiosonde (every 3h to resolve diurnal cycle)

Surface Meteorology including Solar radiation and Turbulent Flux

Skin Sea Surface Temperature measurement

CTD (every 3 or 6h) with water sampling

ADCP

Vertical-pointing 95-GHz Cloud radar

LIDAR

Ozone-sonde

Videosonde

Microstructure Profiler

Maintenance of RAMA buoys
(2 ADCP and 2 Surface buoys ?)



Relevant Proposal in JAMSTEC

Repeat Hydrography along WHP - I02 (8°S) and I10 (~111°E)

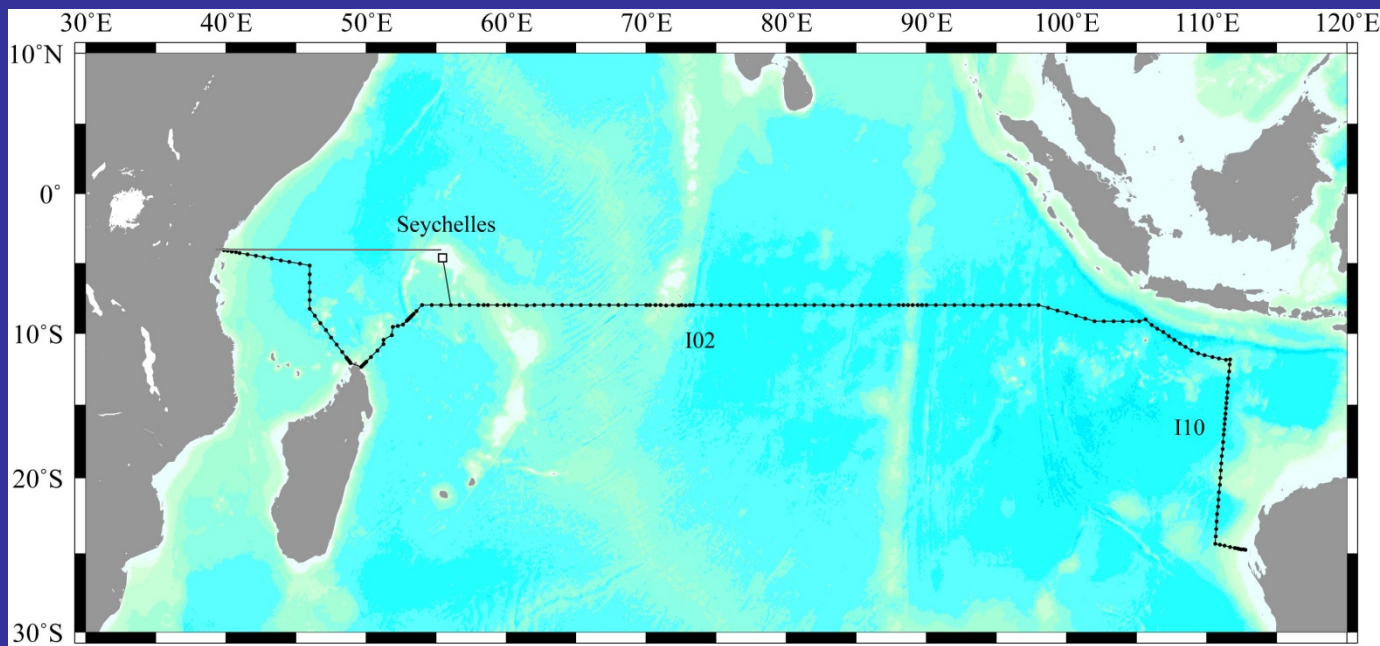
PI : Dr. Akihiko Murata /JAMSTEC

Period : 55 days in Dec. 2011 - Feb. 2012 (after CINDY cruise)

Measurements : 217 CTD stations from Surface to the Bottom

Temp., Sal, DO, Nutrients, Total dissolved inorganic carbon,
Total Alkalinity, pH, CFCs, ^{14}C , ^{13}C , etc.

Data will be submitted to CLIVAR & Carbon Hydrographic Data Office
<http://whpo.ucsd.edu/>



Participation from India and Australia

India

* R/V Sagar Kanya (India) - Committed -

1) led by S. P. Kumar (NIO)

Biogeochemical cruise (CTD at fixed site)

30 days in IO

They will look for the possibility of Radiosonde observation.



2) led by VSN Murty (NIO)

RAMA cruise (~30 days)

Australia

* R/V Southern Surveyor (Australia) - Will be Proposed -

led by E. Schulz, M. Wheeler, H. Hendon (CAWCR)

From Colombo, Sri Lanka to Christmas Island

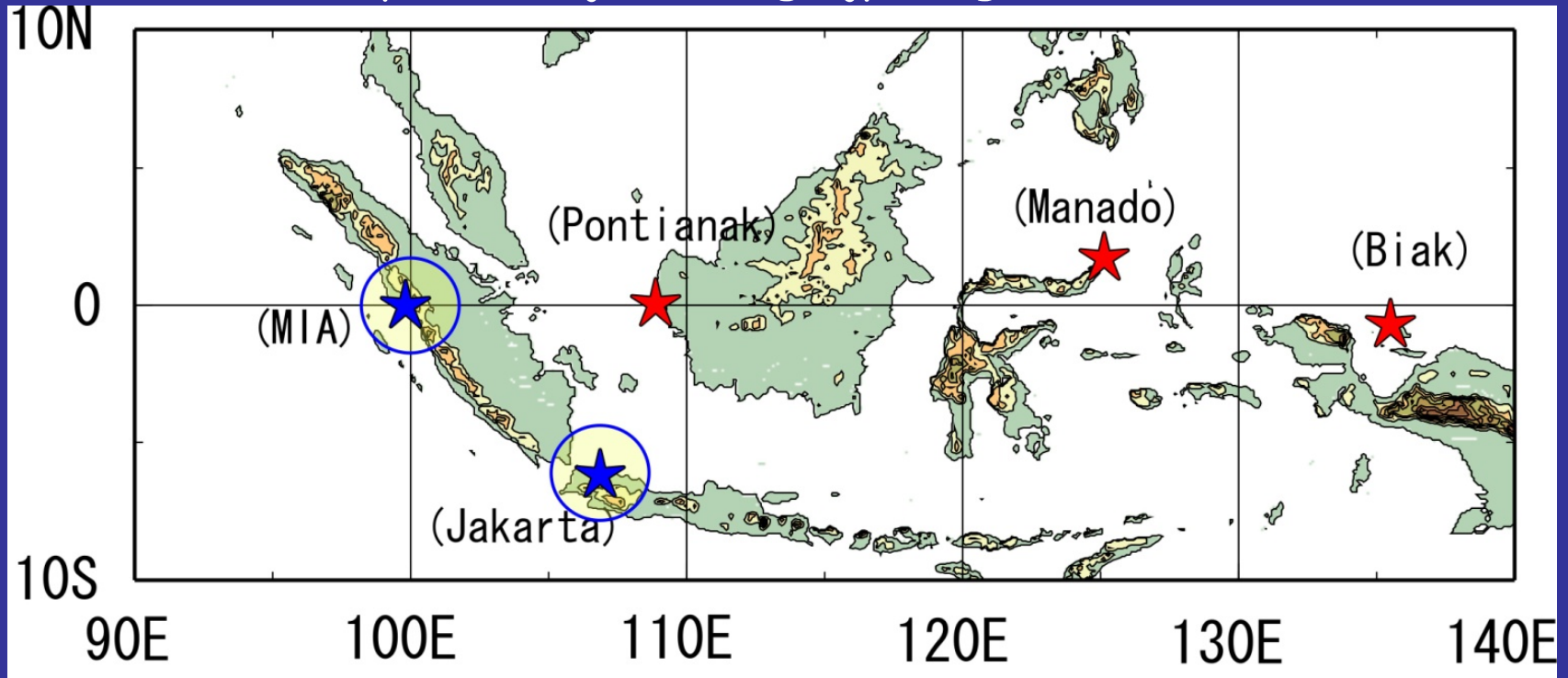
max 25 days on station

Air-sea flux + Radiosonde sounding



HARIMAU (Hydrometeorological ARray for ISV-Monsoon Automonitoring)

<http://www.jamstec.go.jp/iorgc/harimau/>



★ Doppler radar + Auto Weather Station

★ Wind Profiler + Auto Weather Station

Doppler radar

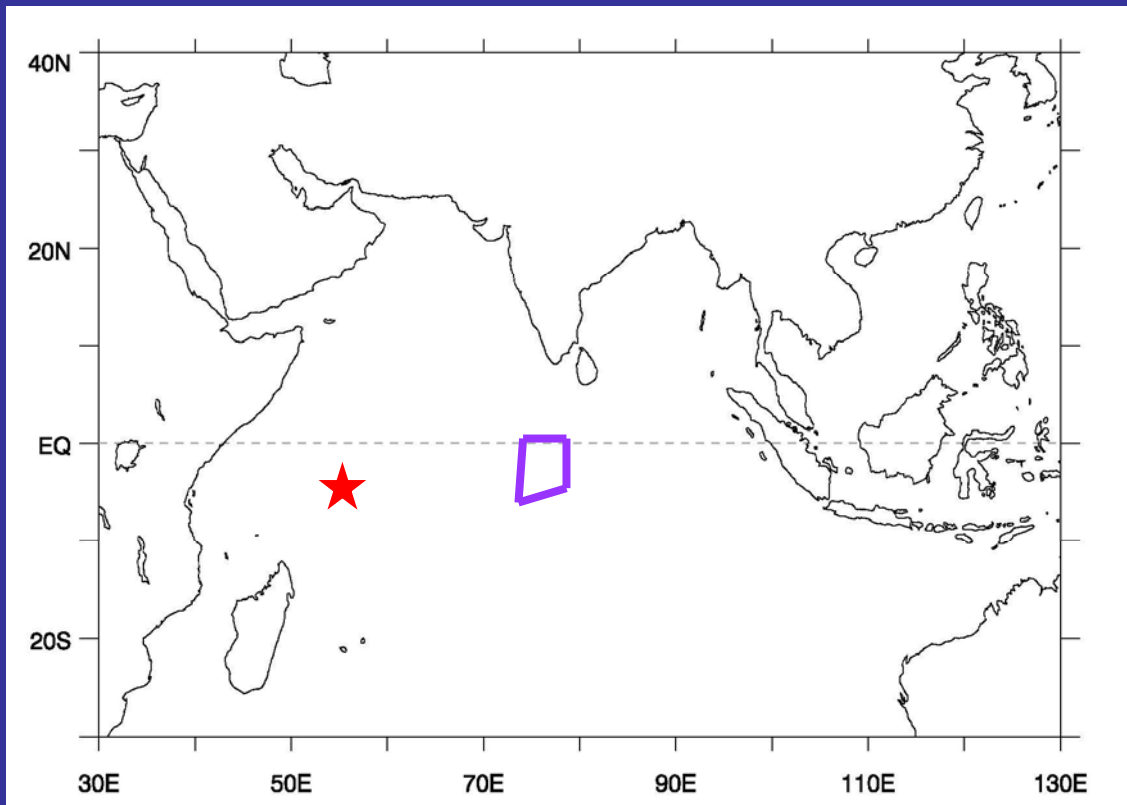


Wind Profiler



Radiosonde Observation at Seychelles

Seychelles National Weather Services will conduct radiosonde sounding twice daily during the campaign (4 months) with intensive 6-hourly launch for designated 1 month (i.e., late October - early December).



Misc.

Web Pages

CINDY <http://www.jamstec.go.jp/iorgc/cindy/>

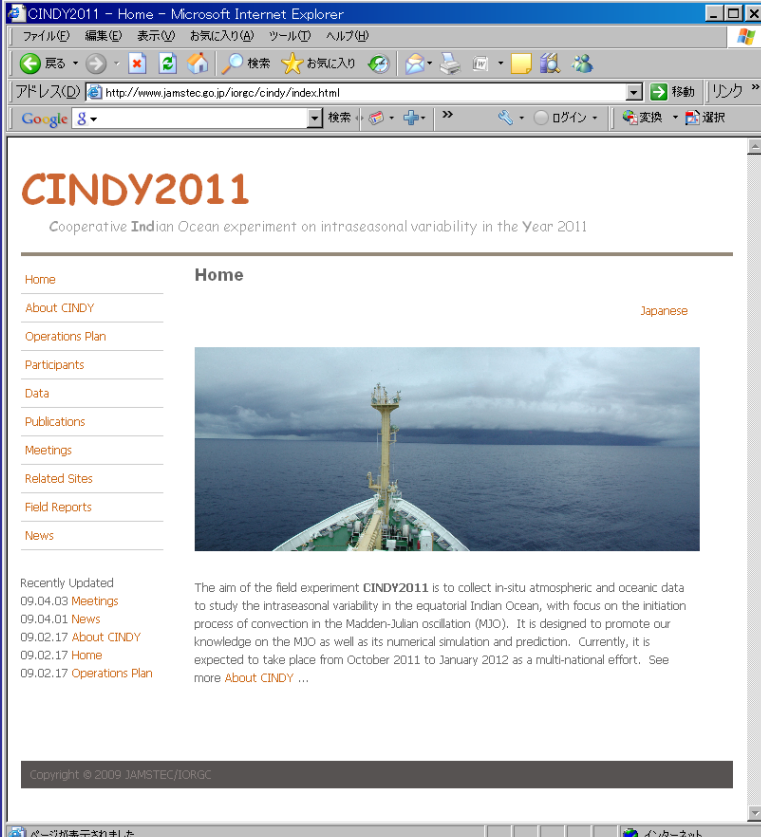
MISMO <http://www.jamstec.go.jp/iorgc/mismo/>

Data Policy

Encourage participants to open QCed data within 1-year from the end of campaign (~ Feb. 2013)

Symposium or Workshop in 2012

1 year from CINDY
20 years from TOGA-COARE



The screenshot shows a Microsoft Internet Explorer browser window displaying the CINDY2011 website. The browser's address bar shows the URL <http://www.jamstec.go.jp/iorgc/cindy/index.html>. The website header features the title "CINDY2011" in large orange letters, with the subtitle "Cooperative Indian Ocean experiment on intraseasonal variability in the Year 2011" below it. A navigation menu on the left lists various sections: Home, About CINDY, Operations Plan, Participants, Data, Publications, Meetings, Related Sites, Field Reports, and News. A "Japanese" link is visible in the top right corner. The main content area includes a large photograph of a research vessel at sea. Below the photo, there is a "Recently Updated" section with a list of dates and links: 09.04.03 Meetings, 09.04.01 News, 09.02.17 About CINDY, 09.02.17 Home, and 09.02.17 Operations Plan. To the right of this list, a paragraph describes the experiment's goal: "The aim of the field experiment CINDY2011 is to collect in-situ atmospheric and oceanic data to study the intraseasonal variability in the equatorial Indian Ocean, with focus on the initiation process of convection in the Madden-Julian oscillation (MJO). It is designed to promote our knowledge on the MJO as well as its numerical simulation and prediction. Currently, it is expected to take place from October 2011 to January 2012 as a multi-national effort. See more About CINDY ...". The footer of the website contains the copyright notice "Copyright © 2009 JAMSTEC/IORGc".