

Project Endorsement Form

1. PROJECT TITLE

Full title	R/V Hakuho-Maru 2018 cruise
Acronym	Hakuho2018
Website	N/A
Keywords (up to 10, describing the project research)	Eastern Indian Ocean, Upwelling system, ocean dynamics, air-sea interactions, biogeochemical/ecological variations, Indonesian throughflow, meso/submeso-scale phenomena, biophysical interaction
New initiative or continuing programme?	The cruise was already finished in Dec. 2018, but quality check and analysis of obtained data are in progress now and will continue for a few years, at least until March 2021.

2. APPLICANTS

Lead applicant / Project Leader / key research contact person:

First name	Yukio
Last name	Masumoto
Affiliation	Dept. of Earth and Planetary Science, The University of Tokyo
Postal address	Hongo 7-3-1, Bunkyo-ku, Tokyo, 113-0033, Japan
Country	Japan
Telephone	+81-3-5841-4297
Email address	masumoto@eps.s.u-tokyo.ac.jp
Institutional or personal website	http://www.eps.s.u-tokyo.ac.jp/index-en.html

Other key participants / research team leaders: (repeat as needed)

First name	Hiroaki
Last name	Saito
Role in the project	Biological oceanography, Planktons
Affiliation	Atmosphere and Ocean Research Institute, The University of Tokyo
Country	Japan
Email address	hsaito@aori.u-tokyo.ac.jp
Institutional or personal website	https://www.aori.u-tokyo.ac.jp/english/index.html

First name	Hajime
Last name	Obata
Role in the project	Chemical Oceanography, Trace Metals
Affiliation	Atmosphere and Ocean Research Institute, The University of Tokyo
Country	Japan
Email address	obata@aori.u-tokyo.ac.jp
Institutional or personal website	https://www.aori.u-tokyo.ac.jp/english/index.html

First name	Iwao
Last name	Ueki
Role in the project	Ocean dynamics, Upwelling dynamics
Affiliation	Japan Agency for Marine-Earth Science and Technology

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Country	Japan
Email address	uekii@jamstec.go.jp
Institutional or personal website	http://www.jamstec.go.jp/rcgc/e/oairg/

N.B.: Please note that all these names and contact details will be added to the IIOE-2 membership database.

3. ABSTRACT– Brief description of the project: (1/4 page maximum)

This will be placed on the IIOE-2 Website after endorsement.

The current systems of the Eastern Indian Ocean show dynamic seasonal and interannual variations responding to seasonal monsoon and climate variability as well as climate regime shifts. The biogeochemical cycling and ecosystem of the Eastern Indian Ocean also change with the physical oceanographic regime. Since the Eastern Indian Ocean is located at the most populated region of the world, the ecosystems there are also influenced by various anthropogenic perturbations such as pollutants, plastic debris, overfishing, etc. The Eastern Indian Ocean is, however, seriously understudied region relative to the Pacific Ocean and the Atlantic Ocean, due mainly to paucity of in situ observations, hence our knowledge on the physical, biological, and biogeochemical processes are limited. Understanding the mechanisms of biogeochemical cycle and ecosystem responses to natural and anthropogenic perturbations, as well as variability in physical conditions, is an emergent issue since increasing human activity is degrading the quality and quantity of marine ecosystem services, on which our society is dependent.

In order to tackle with the emergent issues, it is essential to take an interdisciplinary approach, under which physical oceanographers, biogeochemists, biological oceanographers, and atmospheric chemists work together to unveil physical-chemical-biological interactions in the Eastern Indian Ocean. This research cruise, using R/V Hakuho-Maru, provides one such opportunity and in situ data for better understanding of the above key issues.

4. LINKS TO IIOE-2 SCIENCE PLAN:(1/2 page maximum)

How do you anticipate your project to contribute to the IIOE-2 strategy and science delivery, with reference to which (either one or more) of the six IIOE-2 Science Plan themes that your project responds. Please state the specific issues and questions addressed by your project in the context of the IIOE-2 Science Plan themes and key issues.

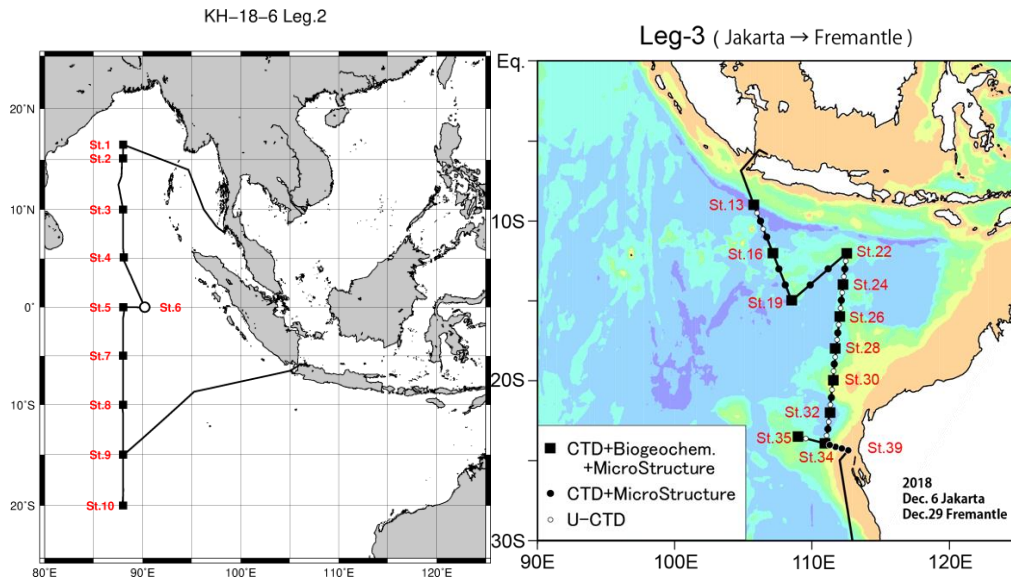
This cruise will contribute to IIOE-2 mainly through its science theme 2 (boundary current dynamics, upwelling variability and ecosystem impacts), theme 3 (monsoon variability and ecosystem response), theme 4 (circulation, climate variability and change), and theme 6 (unique geological, physical, biogeochemical, and ecological features of the IO), since understanding of physical and biogeochemical/ecological aspects in the eastern Indian Ocean is cross-cutting issue relevant to many important topics raised by the IIOE-2 Science Plan. We will participate as much as possible in conferences/symposiums/workshops of IIOE-2. The project leader will attend the IIOE-2 SC to report progresses of and scientific highlights obtained by the cruise.

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5. REGION(S) OF STUDY

Provide a description of ‘where’ the research is to be conducted (for field based activities) and/or the region or regions to which the research pertains (you are encouraged to consider providing a figure as an addendum to your proposal).

The target area of this cruise is the eastern Indian Ocean. There are two legs in this cruise (Leg-2 and Leg-3) that we conducted measurements. Leg-2 focuses the Bay of Bengal and equatorial eastern Indian Ocean, while Leg-3 observed in the regions of the Indonesian throughflow and Ningaloo Nino/Nina between Indonesia and Australia. The following figures indicate the cruise tracks and locations of observation stations.



The cruise tracks of Leg-2 (left) and Leg-3 (right) of R/V Hakuho-Marui KH-18-6 cruise.

6. TIMETABLE OF THE PROJECT

Start date: November, 2018	End date: March, 2021
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7. LINKAGES WITH OTHER PROJECTS / PROGRAMMES / INITIATIVES

Is the project part of a related national or multi-national activity?
If yes, provide the related activity title and website for reference, if available:

This research cruise is a part of EIOURI project, which is one of the IIOE-2 endorsed program. We also try to make a strong link to other programs/projects/cruises focusing on the eastern Indian Ocean, for example the Australian cruise using R/V Investigator along 110E.

Is your project part of, or affiliated to, another SCOR, IOC or IOGOOS activity or project?

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Perth Australia Node
IOC Perth Programme Office
c/o Commonwealth Bureau of Meteorology
3rd Floor, 1 Ord Street
West Perth, Western Australia, 6005, Australia.
Phone: +61-8-92262899
Email: iioe-2@bom.gov.au

<http://www.iioe-2.incois.gov.in>

Hyderabad India Node
Indian National Centre for Ocean Information Services (INCOIS)
Pragathi Nagar
Hyderabad, Telangana 500 090, India.
Phone: +91-40-2388 6142
Email: iioe-2@incois.gov.in

If “yes”, please indicate which activity or project:

No

8. DATA MANAGEMENT

1. Will new data be collected as part of this project (yes or no?)

Yes

2. Contact information if any, of the person in charge of the data management from whom the metadata can be accessed by interested IIOE-2 stakeholders.

Please note that for all IIOE-2-endorsed projects, IIOE-2 will have developed its own metadata portal. Once the project is endorsed, the project leader will be asked to provide the metadata information of the project.

Yukio Masumoto will manage data information, which will be collected during EIOURI.

Yukio Masumoto

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masumoto@eps.s.u-tokyo.ac.jp

9. FUNDING

Please note that IIOE-2 strongly encourages funded/resourced projects. However, IIOE-2 may endorse projects yet to receive funding/resourcing if IIOE-2 endorsement can be clearly shown to significantly aid in prospects for funding/resourcing.

Has funding and resources to successfully achieve and undertake the project been obtained? Indicate the sources of funding and resources that have been approached and/or secured.

R/V Hakuho-Maru ship-time was assigned based on the application to Atmosphere and Ocean Research Institution, The University of Tokyo.

Analyses of the data are ongoing projects under the research budget already funded by Japan Society for the Promotion of Science until March 2021.

10. BENEFITS FROM IIOE-2 ENDORSEMENT (1/4 page maximum)

Specify why you are seeking endorsement and how the activity would benefit from endorsement, and how the IIOE-2 SC could assist in the implementation of your project.

We are planning to organize an additional research cruise in the Indian Ocean using the same R/V Hakuho-Maru in the near future. The IIOE-2 endorsement to our existing Hakuho-Maru project would be very useful and effective to appeal to a selection committee of research funding and to a planning committee of research ship schedules.

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11. OPTIONAL: OTHER COMMENTS/INFORMATION/MATERIAL (*length and detail may be at the discretion of and as deemed necessary by the applicant*)

Please feel free to provide any other comments, information or materials that you feel relevant to your proposal for the IIOE-2 Steering Committee's information and benefit. You may provide this as general information or provide the additional comments/information/materials as relevant to any of the specific Sections above.

The Cruise Reports are attached for your reference.

However, please note that the reports include some raw data, which we would NOT like to open at this stage since quality check has not been finished yet. Therefore, please refer, if necessary, to these reports only for this endorsement procedure, and please do not open to public on the IIOE-2 web. Thank you for your kind consideration.

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