

---

[EJ] Evening Poster | A (Atmospheric and Hydrospheric Sciences) | A-OS Ocean Sciences & Ocean Environment

## [A-OS13]Physical, biogeochemical, and ecological aspects and their mutual relations in the Indian Ocean

convener:Yukio Masumoto(Graduate School of Science, The University of Tokyo), Hiroaki Saito(Atmosphere and Ocean Research Institute, The University of Tokyo), Iwao Ueki(国立研究開発法人 海洋研究開発機構)

Tue. May 22, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Recent discovery of new climate modes and development of basin-scale and regional observing systems in the Indian Ocean advance researches on physical, biogeochemical, and ecological aspects of ocean variations. In addition, inauguration of international research programs in the Indian Ocean, such as IIOE-2 and EIOURI, leads high expectation of related studies in earnest both in each of the disciplines and in interdisciplinary ways. This session invites papers on physical, biogeochemical, and ecological aspects in the Indian Ocean and relations among these elements of the ocean variations, to facilitate integrated understanding of the Indian Ocean variability, as well as to stimulate collaborative researches among the relevant scientists.

---

## [AOS13-P03]The mixed layer variations in the marginal sea off the western coast of Sumatra associated with the MJO passage during the Pre-YMC and YMC

\*Qoosaku Moteki<sup>1</sup>, Masaki Katsumata<sup>1</sup>, Kunio Yoneyama<sup>1</sup>, Kentaro Ando<sup>1</sup>, Takuya Hasegawa<sup>1</sup>

(1.Department of Coupled Ocean-Atmosphere-Land Processes Research, Japan Agency for Marine-Earth Science and Technology)

Keywords:ocean mixed layer, Madden Julian Oscillation

The mixed layer variations in the marginal sea off the western coast of Sumatra before and after the passage of the Madden Julian Oscillation (MJO) observed during the R/V Mirai cruises (Pre-YMC [Years of the Maritime Continent]: MR15-04 and YMC: MR17-08) are investigated. During the MR15-04 cruise, the halocline above 20 m depth was very strong before the MJO arrival, and the mixed layer depth (MLD) was very shallow (< 10 m). During the MR15-04 cruise, it was difficult to increase the MLD by the MJO wind bursts because of a very strong surface salinity stratification (> 0.1 psu/m) before the MJO. In contrast, during the MR17-08 cruise, the layer of 20-100 m was relatively mixed well in comparison with that in MR15-04 because of the stronger MJO wind bursts and the MLD was easily fluctuated due to the diurnal cycle of the surface heating. The difference of the MLD variations between MR15-04 and MR17-08 led the difference of the sea surface temperature tendency and could change the air-sea interaction processes under the MJO.