

R003-07

D会場：11/25 AM2 (11:05-12:35)

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Electromagnetic ocean tidal signals for oceanic monitoring

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As currently the oceans absorb 90% of Earth's excess heat, the importance of estimating the oceanic heat budget cannot be overestimated. Knowing changes in this process as early as possible is highly important. Changes in the heat uptake rate or even raised re-emissions will have a large impact on the future climate. Already now we see a rising number of oceanic heat waves at the ocean surface which lead to coral bleaching and other severe impacts on the ecosystem. Likewise, knowing the freshwater input into the oceans, e.e., from the melting glaciers is highly important as it might lead to tipping of the overturning circulation.

Oceanic electromagnetic (EM) tidal signals are in principle sensitive to both temperature and salinity of oceanic waters. If changes of these tidal signals could be accurately detected and related to climate change induced variations of the sea water properties then the analysis of these measurements could provide a highly significant contribution to oceanic monitoring, prediction and mitigation. We will report on the progress made in EM tidal signal detection and separation from satellites and in-situ observations. Furthermore, we will advertise the exploration of EM tidal signals for oceanic monitoring by demonstrating and discussing the next steps in EM ocean tidal analysis that go beyond the mere signal detection.

