

## ***Interactive comment on “Mesoscale processes regulating the upper layer dynamics of Andaman waters during winter monsoon” by Salini Thaliyakkattil Chandran et al.***

**Salini Thaliyakkattil Chandran et al.**

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Reviewer 1 1) Authors have mentioned the mixed layer depth and isothermal layer depth. It would be better to mention the method or criteria adopted in the manuscript Included the same in the revised manuscript 2) Authors need to discuss about the role of ENSO in modulating the oceanic eddies and planetary waves in the discussion section.

Chen et al. (2012) studied the interannual variability mechanism of the mesoscale eddies in BoB and pointed that the eddy activities do not directly link to El Nino Southern Oscillation (ENSO) events and are sensitive to the baroclinic instability of the back-

C1

ground flow.

3) There are several methods to quantify the oceanic eddies (e.g Okubo-Weiss), please adopt any objective method, such that eddy identification and tracking can be done.

Adopted Okubo-Weiss parameter method to track the eddy and included in the revised manuscript.

4) Wind stress curl values over the locations can be provided in a tabular format

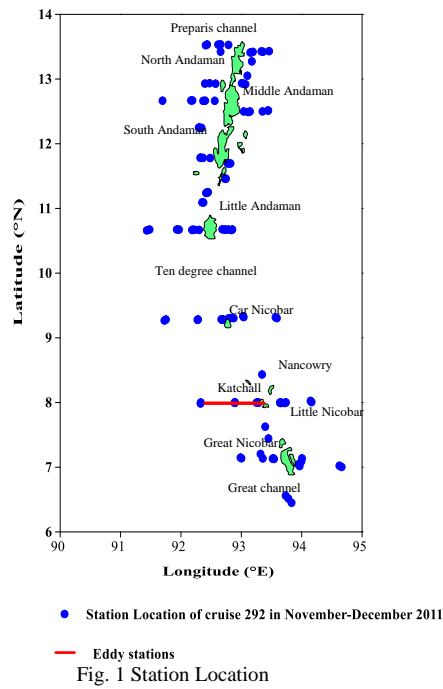
By adopting the Okubo-Weiss method we identified only one strong eddy. The wind stress curl values for CE2 and CE3 dropped from the revised manuscript

Please also note the supplement to this comment:

<https://www.ocean-sci-discuss.net/os-2018-23/os-2018-23-AC3-supplement.pdf>

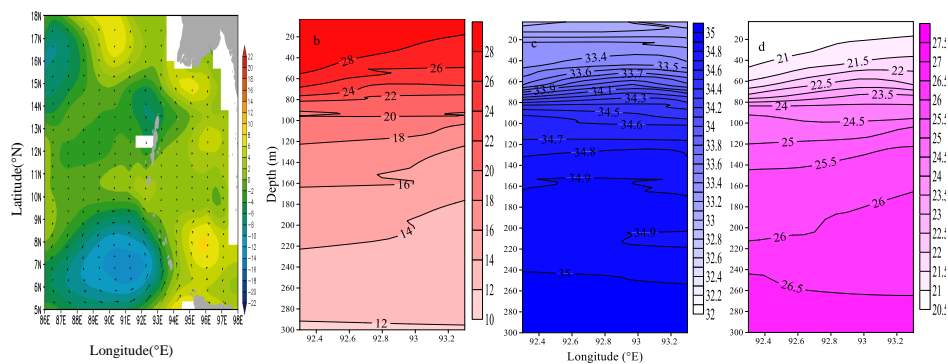
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Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2018-23>, 2018.



**Fig. 1.** Fig. 1 Station Location

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**Fig. 2 a)** Sea Surface Height (cm- Aviso weekly) and geostrophic current (cm/s) and the eddy location **b)** Vertical temperature (°C), **c)** salinity and **d)** density (kg/m<sup>3</sup>) distribution at the eddy location

**Fig. 2.** Fig. 2 a) Sea Surface Height (cm- Aviso weekly) and geostrophic current (cm/s) and the eddy location **b)** Vertical temperature (°C), **c)** salinity and **d)** density (kg/m<sup>3</sup>) distribution at the

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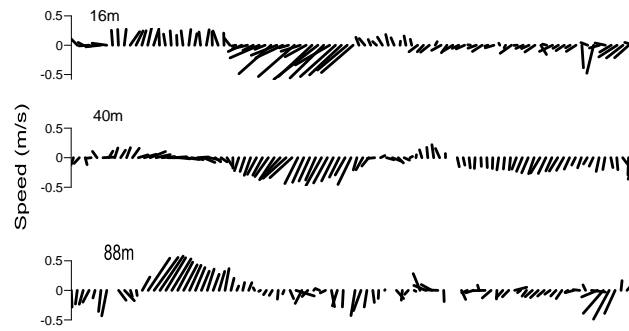


Fig. 3 Horizontal current (m/s) structure at different depth at 8°N

**Fig. 3.** Fig. 3 Horizontal current (m/s) structure at different depths along 8°N

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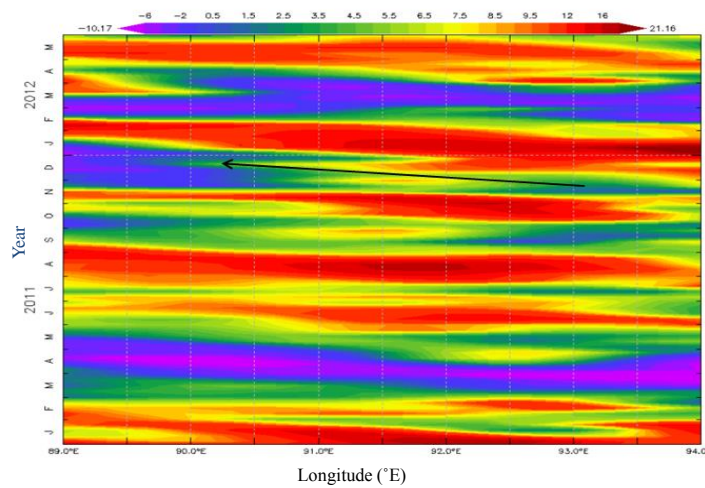


Fig. 4 Hovmuller diagram of SSHA(m) (Aviso monthly) along 8°N

**Fig. 4.** Fig. 4 Hovmuller diagram of SSHA(m) (Aviso monthly) along 8°N

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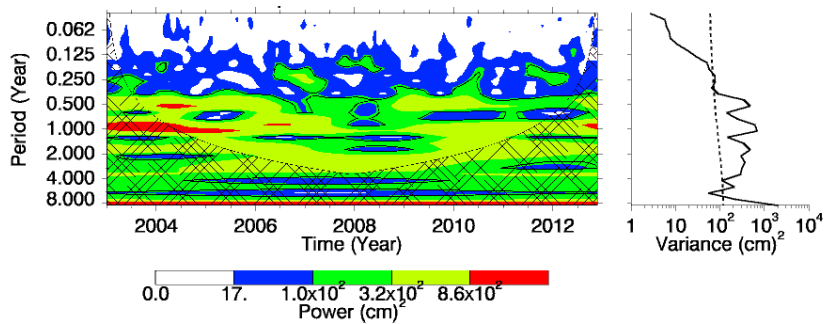


Fig. 5. Wavelet spectra of SSHA (m- Aviso monthly from 2003-2013) along 8°N

**Fig. 5.** Fig. 5. Wavelet spectra of SSHA (m- Aviso monthly from 2003-2013) along 8°N

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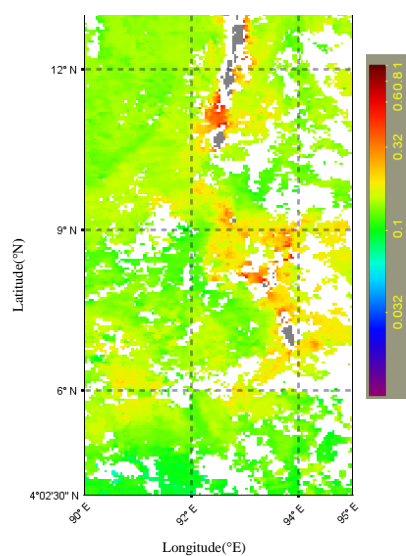


Fig. 6 chl a (mg/m³- weekly MODIS Aqua) pattern during the insitu observation

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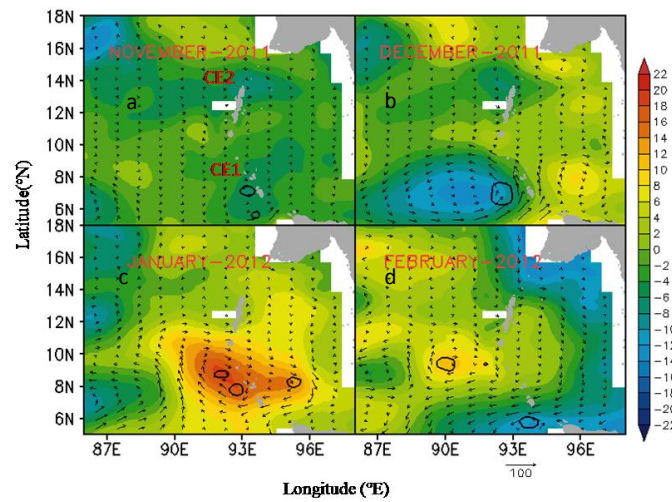


Fig. 7 Merged map of SSHA (m), Geostrophic current (cm/s) and Okubo-Weiss parameter (Black contour of  $-2 \times 10^{-11}/s^2$ ) from Aviso during a) November b) December c) January d) February

**Fig. 7.** Fig. 7 Merged map of SSHA (m), Geostrophic current (cm/s) and Okubo-Weiss parameter (Black contour of  $-2 \times 10^{-11}/s^2$ ) from Aviso during a) November b) December c) January d) February

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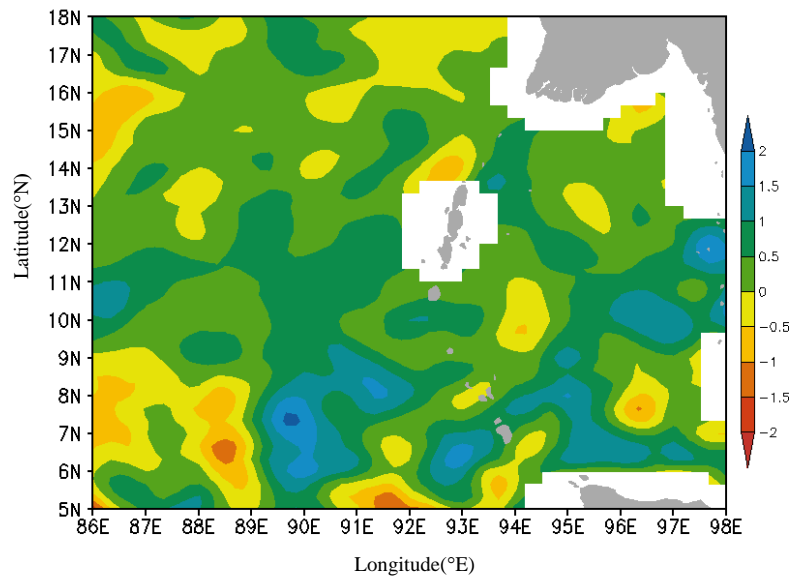


Fig.8 Vertical velocity ( $\times 10^{-5}$ ) at 50m depth from OSCAR in Andaman waters during the eddy period

**Fig. 8.** Fig.8 Vertical velocity ( $\times 10^{-5}$ ) at 50m depth from OSCAR in Andaman waters during the eddy period

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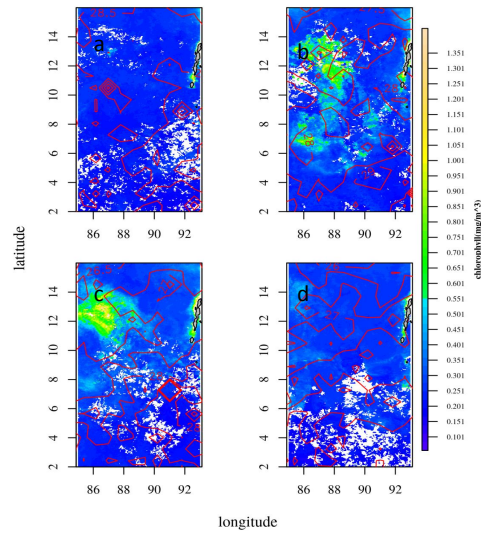


Fig.9 Overlap map of SST ( $^{\circ}\text{C}$ -monthly MODIS Aqua) and Chl a ( $\text{mg}/\text{m}^3$ - monthly MODIS Aqua) during a) November, b) December, c) January, d) February

**Fig. 9.** Fig.9 Overlap map of SST ( $^{\circ}\text{C}$ -monthly MODIS Aqua) and Chl a ( $\text{mg}/\text{m}^3$ - monthly MODIS Aqua) during a) November, b) December, c) January, d) February