

Overview: In this study, high-frequency variation of the SCSMOC was analyzed using high resolution model data. It was found that there is a significant signal in the near-inertial band. This work provides some new ideas on the high-frequency variation of the SCSMOC. The organization of the paper is well thought out. In my opinion, this paper can be published in Ocean Science. Specific comments are listed as below:

1. In the Abstract (lines 9-11), the authors said that the near-inertial signal in the SCSMOC is triggered by variability near the Luzon Strait where geostrophic shear always exists due to. To the high-frequency wind and Kuroshio intrusion, it is unclear which is more important?
2. The statement and the cited literature of the third paragraph seems not support the conclusion “SCSMOC variability spans a wide range of time scales”. The introduction is not well written.
3. In section 2, the model results should be validated against the observations. I recommend you to verify the model output using the mooring observations shown in Fig. 7 in order to get credible conclusions.
4. It should be explained why GLBu0.08 product only *in 2010* is chosen (see last sentence in Section 2)?
5. Why 1500 m and 14° N are selected in Fig. 2 to investigate the deep SCSMOC?

6. “The pattern of the near-inertial variability of SCSMOC (Fig. 4b) is very similar to the near-inertial variability of the Pacific Ocean or Atlantic.” (see third paragraph in Section 3). Any reasons?