

Comments and suggestions on the research article OS-2022-1443 ***“Intraseasonal variability of the South Vietnam Upwelling, South China Sea: influence of atmospheric forcing and ocean intrinsic variability”*** - authors *Marine Herrmann, To Duy Thai and Claude Estournel*.

The main objective of this article is to understand the mechanism of a well-known phenomenon in the Southeast Asian waters during summer: the upwelling at the Southern Vietnam coast (SVU) in the South China Sea (SCS). This manuscript is the continuation of recently published work in Ocean Science :To Duy et al., 2022 that studied the interannual variability of the SVU. In this article, authors - using the same numerical configuration as the previous paper - studied the influence of summer monsoon wind and ocean intrinsic variability on the four main areas of the SVU: the northern coastal upwelling (NCU), the southern coastal upwelling (SCU), the offshore upwelling (OFU) and the shelf off the Mekong River mouth (MKU), in daily and intraseasonal time scale. Results are extracted from ten simulations on the same period (2017 - 2018) with different initial conditions in temperature, salinity, currents and sea surface height (perturbations only made on mesoscale fields). Summer 2018 (June, July, August) is chosen for the case study analyses.

I find this article very well structured and written. The scientific objectives are presented concisely followed by a clear explanation of applied methods and rigorous analyses of the result. The scientific question and computational method are original. However, I have a few questions and suggestions for the authors in order to better understand their work.

In the methodology part (part 2), the bathymetry database used for the model's grid is not defined. Since the resolution of bathymetry is important in the study of current fields, it should be mentioned in the methodology part. Did the authors use a fine resolution bathymetry for the coastal zone?

The second question concerns the ocean intrinsic variability (OIV). If I understand correctly, this OIV represents an ensemble of ocean intrinsic properties such as temperature, salinity, currents, etc. In the authors' opinion, which parameter(s) are the main factor(s) controlling this OIV?

The third question is in regard to the application of the research findings on predicting the upwelling development. Could it be possible to predict the intensity of the upwelling zone using wind forecast?

The final question relates to the role of tide and river discharge on the variability of the upwelling intensity. In the authors' opinion, how important are tidal currents at coastal upwelling zones like NCU and SCU? How much influence do the enormous discharges from the Mekong river have on the properties of MKU?

Technical corrections: some parts need to be re-numbered

Line 198: it should be 4.1

Line 218: It should be 4.2

Line 234: It should be 4.3

Line 287: It should be 4.4

To conclude, the work provided in this paper meets the quality requirements of Ocean Science and is worth publishing. I greatly appreciate the effort of the authors helping us better understand the mechanism of the SVU.