

## ***Interactive comment on “Synoptic fluctuation of the Taiwan Warm Current in winter on the East China Sea shelf” by Jiliang Xuan et al.***

### **Anonymous Referee #1**

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In this paper, The seasonal mean and synoptic fluctuation of the wintertime Taiwan Warm Current (TWC) were investigated using a FVCOM model. It is found that two areas with significant fluctuations of the TWC were identified during wintertime. One fluctuation is related to the intrusion of the Taiwan Strait Current (TSC), the other is due to the wind effects. I agree that the conclusions of the paper are new and interesting, I recommend its publication after some minor revisions.

The minor comments are, 1. There are too many keywords, I suggest that “Taiwan Warm Current, Taiwan Strait Current, Kuroshio, Zhe-Min Coastal Current, East China Sea” are enough. 2. The model domain and open boundaries are not clear, they may be drawn or indicated in figure 1 or 2. 3. In figures 10&11, can you calculate the confidence level of the correlation? 4. A new paper by Liu et al. (2016, Numerical simulation of the Kuroshio intrusion into the South China Sea by a passive tracer. Acta

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Oceanologica Sinica, 2016, 35(9), 1-12. ) used tracer simulation to study the Kuroshio intrusion, their model domain covered some of yours. I suggest in discussion of your Fig.14b, comparison between both model results is beneficial.

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