

Interactive comment on “Influence of the Kuroshio on the water properties in the shelf” by T. Matsuno et al.

Anonymous Referee #1

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The manuscript “Influence of the Kuroshio on the water properties in the shelf” by Matsuno et al. gives a rather comprehensive review of the present-day understanding of the water exchange between the Kuroshio and the South China Sea through the Luzon Strait and between the Kuroshio and the East China Sea. The manuscript generally meets the standard of publication except for the following few problems to be fixed before final acceptance. 1. The Taiwan Warm Current traditionally refers to the northward currents off the coast of Chinese Zhejiang and Fujian province. The currents inside the Taiwan Strait may or may not be the Taiwan Warm Current, depending on their destinations. The authors in this manuscript have used the term Taiwan Warm Current to refer the Taiwan Strait Currents, which could cause confusion. I suggest using Taiwan Strait Currents to refer the currents in side the Taiwan Strait. 2. The authors argue that the transport difference between the Tsushima Warm Current and the Taiwan Strait Cur-

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rent determines the water exchange between the Kuroshio and the shelf circulation, which is true. However, this is only the lower limit of the exchange. The wind-driven circulation over the shelf can also force significant exchange between the Kuroshio and the shelf circulation. Although this is not the main focus of this manuscript, it is important to recognize this process in this paper. 3. I guess the most troublesome of this analysis is the discussions of the numerical model results in page 748, which show no or weak intrusion of the Kuroshio onto the shelf in winter. The Kuroshio intrusion northeast of Taiwan is actually stronger in winter than in summer, according to the study of Hsueh et al. (1992). The northward movement of the Taiwan Warm Current off the Changjiang mouth is also observed. I suggest the authors to compare their numerical results with existing studies and revise this conclusion. 4. Several figures, for example Figure 3, need to be enlarged for a clearer publication.

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