

### **General comments:**

This study employs tidal gauge and remote sensing data to investigate the statistical characteristics of continental shelf waves in the northern South China Sea. The topic should be of interest to those who focus on the coastal dynamics. I've identified some points below which might help. I'm recommending a major revision before it can be published.

### **Specific comments:**

1. According to Wang and Mooers (1976) as well as Brink (1991) and Huthnance (1995), the CSW and ATW referred in this manuscript should be more specified as Kelvin wave and topographic Rossby wave, respectively.

Wang, D., and C. N. K. Mooers, 1976: Coastal-trapped waves in a continuously stratified ocean. *J. Phys. Oceanogr.*, **6**, 853-863.

Brink, K. H., 1991: Coastal-trapped waves and wind-driven currents over the continental shelf. *Annu. Rev. Fluid Mech.*, **23**, 389-412.

Huthnance, J. M., 1995: Circulation, exchange and water masses at the ocean margin: the role of physical processes at the shelf edge. *Prog. Oceanogr.*, **35**, 353-431.

2. The description of wavelet analysis in section 2.5 is not necessary because it is a method widely used in different studies.

3. By the way, it should be better to describe the theory of CSWs in section 2 rather than in section 4.

4. The EOF analysis may be a better tool to reveal the principal modes in Figs. 3 and 8.

5. The boundary conditions should be given in sections 4.1.1 and 4.1.2.

6. Fig. 4 could be omitted because it is not helpful for the analysis and there are also few descriptions about it in the manuscript.

7. Since the authors have realized that the discrepancies in Fig. 7 may be owing to the wind forcing and baroclinicity, they had better include these effects in Eq. 6 and show the relevant dispersion curve for comparison.

8. The results shown in Fig. 9 suggest that the assumption at L260-264 is not proper for the reality.

### **Technical corrections:**

1. L336: it should be (24).