

## Peer review – round 2

The paper investigates an observed asymmetry in the response of coastal currents to fluctuating wind stress on a bank offshore of Korea. Observations are supplemented by a realistic model in which the asymmetry persists. Using momentum balance analysis and an idealized model, the authors identify spatial differences in mass divergence driven by Ekman transport as the primary mechanism underlying the observed asymmetry. The findings are then generalized to account for differences in offshore circulation and wind patterns, suggesting that such asymmetries may not be limited to the study area. The paper is well-conceived, and the text and figures are generally clear. I recommend the manuscript be accepted with only minor revisions:

- The additional sensitivity experiments in response to reviewer suggestions are not discussed in the manuscript. In discussions where these additional experiments would strengthen or nuance arguments, it may be beneficial to mention them (as “not shown” or perhaps even in the appendix/supplementary material). For example, the authors state that they find congruence between modifying bottom friction and the ATW framework; this may be appropriate to present in some way.
- The sensitivity experiments presented in the results section (and those in response to reviewer suggestions) are not mentioned in the methods section; a brief note on the changes to the wind stress period and magnitude may be appropriate there.
- Although the points presented in figure 13 and 14 are valuable for the generalization of the findings, the figures themselves may perhaps be combined, moved to an appendix or supplementary material, or otherwise be reduced. Since the sensitivity experiments are shown to produce a linear response, the number of subplots may be reduced, in my opinion. For example, perhaps the first two panels in Figures 13 and 14 are sufficient for the body of the manuscript and could be combined into one figure, while Figures 13c, d and 14c, d could be removed or moved to an appendix/supplementary material.
- The discussion of the ATW framework, coastal-trapped lee waves, topographic Rossby waves, and stratification is now quite convincing; however, its presentation could be improved by a clearer introduction to which concepts will be discussed, how they differ, and how they would affect the asymmetry. This would primarily apply to the latter three, as the first is consistent with the explanations presented in the results section.
- The question of how representative the observational period is, and whether the asymmetric response to wind forcing is seasonal, is not addressed in the text. Perhaps a short note on the representativeness would be appropriate.
- On line 118, the Coriolis parameter “ $f$ ” is shown as “ $f$ ”