We greatly thank the referee for the effort he applied on the review, for helpful suggestions and the provision of additional relevant references.

In the following, the referee's comments are shown in blue.

This is a very nice paper on dispersion characteristics in German Bight. What makes this paper quite special is the existence of offshore wind farms (OWFs) in the region, even though these effects do not really show up in the results. Also, the authors did an excellent job in executing the paper as well discussing at length with respect to all previous work (maybe with the exception of some, as suggested below). Some of this discussion is fueled by the inconclusive nature of the results, which seem to be mainly due to the small number of drifters; something that could be improved in the future. Nevertheless, overall it is a great, careful study and I recommend acceptance subject to possible modification as per my minor comments below:

- page 3: In a variation of the nice literature review laid out by the authors, the following paper (on the basis of 300 drifters) says that local and non-local anti-dispersion dispersion can be imbedded in each other; namely, as the larger scale tracer cloud grows in size, parts of it get concentrated by surface convergence, or ageostrophic motions:
  - D'Asaro et al., 2018: Ocean convergence and dispersion of flotsam. PNAS, https://doi.org/10.1073/pnas.1718453115.

  It is a bit more complicated but perhaps more accurate depiction of what could be going on in the ocean. Especially considering that wakes from OWFs here, maybe it is applicable.

  Indeed this is a very relevant reference, thank you for the advice! In the revised manuscript we refer to this study in both the introduction and the discussion section.
- page 4, paragraph 20: regarding how GPS errors reflect to some dispersion metrics, the following paper has some analysis:
  - Haza et al., 2014: How does drifter position uncertainty affect ocean dispersion estimates? J. Atmos. Ocean Tech., 31, 2809-2828.

  This study has been added as a reference in Section 2.1.
- page 8, paragraph 20: how was beta=0.006 determined? Is it based particularly for these types of drifters? I am asking because typical wind drift is about 3%:
  - Bye, J.A.T., 1967: The wave-drift current. J. Mar. Res. 25, 95-102.
  - Bye, J.A.T., 1988: The coupling of wave drift and wind velocity profiles. J. Mar. Res. 46, 457-472.
  - Wu, J., 1975: Wind-induced drift currents. J. Fluid Mech., 68, 49-70.
  - Wu, J.,1983: Sea-Surface Drift Currents Induced by Wind and Waves. J. Phys. Oceanogr. 13, 1441-1451.

  The value of beta was specified in Callies et al. (2017) considering drifters of the same type. This reference is given in the manuscript. As Callies et al. (2017) dealt with the same type of drifters, one could say that beta was optimized for this drifter type. However, less perfect behaviour would imply a larger rather than a smaller value of beta. Callies et al. (2017) found that assuming a drag of 0.6% of the 10 m wind corresponded with using 50% of surface Stokes drift, which is in reasonable agreement with the fast decrease of Stokes drift with depth and the fact that drifters are supposed to represent currents in a 1m surface layer.
- page 9, line -2: I do not quite understand this conclusion: is the large amplitude sinusoidal behavior in the trajectories governed by wind or tidal cycle? If wind only, is there no influence of the tides there (I am not familiar with the area)?

  It seems a typing error has crept in and the referee refers to the discussion in the first paragraph in Section 3.1.1 (lines ~20), where Fig2a is described.

Tidal currents are very important in this region and the large amplitude sinusoidal oscillations (oriented along a southeast-northwest direction) are caused by these tides indeed. However, superimposed to this regular oscillation, wind-driven residual currents move this regular pattern of tidal movements back and forth along a roughly southwest-northeast oriented direction (during the period studied). A reversal of this shift by residual currents occurs, for instance, at the end of the period that is colour coded in blue. We revised the description in the following form: "*After winds veered to blow from the north-west, residual transports reverse their direction and the tide induced pattern of oscillatory drifter movements is shifted back towards the* OWF *area*".

- If wind is very important, the authors should explain a bit more whether wind effect is happening due to coefficient beta (which is smaller than I expected) or the model BSHchmod. I am asking this because no ocean model I have seen is very good in simulating current/wind/wave effect in the upper 0.5 m of the water column.

  The reversal of residual currents after winds veered is an effect that does not depend on β but is an effect already contained in the hydrodynamic fields from BSHcmod our drift simulations are based on. The following sentence has been added: "*Note that this reversal does not depend on the choice of* β *parametrizing wind drag in Eq. (9) but is already represented by the Eulerian surface currents* v_E".
- page 16, figure 6: very impressive agreement between real and modeled trajectories! Can the authors comment why the agreement is so good? Is it the wind, or lack of coherent structures in the ocean (which usually tend to lead to chaos), or..?

  Looking at the set of observed trajectories it seems that they all follow a rather homogeneous mesoscale flow pattern. Therefore the relevant flows can be well resolved by the model. The situation might change under other wind conditions. Note that during this experiment winds were relatively weak, possibly giving rise to less chaotic flow patterns. But it is hard to provide a reliable answer without further experiments in this area.

  However, a recent study that was just published seems to at least not contradict our estimate of beta. In the manuscript we added the following comment to the paragraph following Eq. (9): "*This value estimated by Callies et al. (2017) seems largely consistent with findings of a more recent experimental study by Meyerjürgens et al. (2019). From seven drifters tracked in the German Bight they estimated a wind slip of 0.27 % and a total wind induced drifter motion of 1 % of 10~m winds.*"
- page 28: Veron-Bera and LaCasce (2016) filter at inertial time scales, which coincide with the temporal range of submesoscale. They could be throwing the baby with the bathwater.

  At least their argument does not seem applicable for the data we are dealing with.