Dear Luciano and co-authors,
Thank you for this revised version of your manuscript and the detailed response that you provided to both referees. I think the paper is in a very good shape, and almost ready. However, my advice is that the paper needs some additional minor changes before publication.
My main concern is that several of the points raised by the reviewers (and perfectly addressed by your comments) are very appropriate and raise some additional discussion points (mostly concerning the methods and validation) that should be incorporated into final manuscript. For instance:

We appreciate the positive evaluation of our work, and we are very thankful to the editor for the suggestions. We have replied below (in blue) to all comments. The revised text is indicated in italic and in between quotes. The line numbers correspond to the revised manuscript.

- Provide additional discussion in the MS on the methodological choices made for EOF computation (the previous filtering / interpolation) and the potential consequences in the results, in agreement to the comments of the reviewers and your answers.

Reply: We have followed the editor's suggestion and have commented about the similarity of the results using distinct filtering and interpolation schemes prior to the EOF computation.

Line 161 - 163

"The zonal and meridional surface velocity components were linearly interpolated at grid nodes with time gaps ≤ 6h. This threshold assures that no excessive interpolation is performed (as the flow generally does not change drastically during such time interval). It was checked that other interpolation choices do not affect the results."

Line 325-326

"It is noted that the EOF results remain similar with unfiltered data. In particular, the spatial patterns of modes 1 and 2 are analogous to those obtained from filtered data and the explained variability is 42% and 9.4%, respectively."

- Provide additional discussion in the MS on the possible impact of the depth of the first ADCP cells on the observed differences (at 13.5 MHz your radar measurements are very shallow (<0.5m), so differences can be expected when comparing with pointwise measurements at 2-4 m depth)

Reply: We have followed the editor's suggestion and have included some details about the depth measurement of both equipment.

Lines 219-225

"Large differences up to 0.3 $m.s^{-1}$ (Figure 4a) are episodically observed. Such differences are expected due to the distinct depth of HFR and ADCP measurements. ADCPs upper measurements are at 2-4 m below the surface, while the radars measure the surface layer (< 0.5 m below surface) which is more likely affected by wind drag. Moreover, HFR and ADCP systems have distinct measurement methods (e.g., in terms of horizontal position, footprint, sampling duration and averaging). Despite these inherent differences between both equipment, the correlations between HFR and ADCP velocities support the good quality of the HFR measurements, in particular near the coast."

- Even if not clear explanation can be given, additional discussion should be provided for the mismatch observed in January 2017 between HFR and ADCP

Reply: We have followed the editor's suggestion and have commented on the observed mismatch between the HFR and ADCP (see previous reply).

Both reviewers agree (and I do too) that the comparison with un-drogued drifters is not meaningful for validation purposes. I see you want to keep this comparison in the MS because is the only data offshore, I think you an keep it but please provide a good rationale for it – i.e. explaining this is a comparison showing a qualitative agreement between surface currents provided by the radar (surface current) and the surface drifters (surface current+wind) and consider avoiding the use of validation statistics (table 1). Did you consider performing Lagrangian comparisons? Another possibility is to check the wind in the period of comparisons (you could indeed perform quantitative comparisons with data only for periods of very low winds).

Reply: We much appreciate this comment and agree that drifters' trajectories should be compared qualitatively, only, with the PVDs. Though, we believe that there is a misunderstanding about the methods used to build the statistic table, due to our inaccurate explanations in the original MS. We used pseudo-Eulerian velocities computed from each pairs of successive drifters positions, then compared with the nearest HFR grid node velocity. This is now explicit in the revised version. If still required by the editor, we can alternatively exclude the statistics in Table 1 and keep only the qualitative comparisons of trajectories.

Lines 230-240

"On the shelf, drifters' trajectories were qualitatively compared with HFR trajectories obtained from a progressive vector diagram (PVD) of unfiltered velocities. For statistical comparisons with unfiltered HFR data at the nearest node, drifter's pseudo-Eulerian velocities were derived from the distance between pairs of successive drifters positions*, subsampled at the HFR time, divided by the time interval (1 hour).*

The trajectories of the three drifters presented a general southward displacement of 31-45 km affected by clockwise inertial rotation (Figure 1, grey lines). Such overall drift was fairly reproduced by the PVDs in all the 3 cases (Figure 1, black lines), although they remained closer to the shore than the drifters (in particular when compared with drifter 3). The skill scores between the drifter-derived and HFR flow components is poorer than for HFR-ADCP data (Table 1). Discrepancies between HFR and drifter pseudo-Eulerian velocities are inherent to their distinct acquisition techniques (e.g., spatial averaging of eulerian records for HFR against lagrangian measurements at a point for the drifters and subsequent transformation to pseudo-Eulerian velocities), along with the potential wind drag effect on the emerged part of the drifters."

- a typo in Line 232 "lagrangean" --> "Larangian"

Reply: Corrected (Line 239). We are thankful to the Reviewer for spotting this typo.