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Discussions

Interactive comment on "A combined quality-control methodology in Ebro Delta (NE Spain) high frequency radar system" *by* P. Lorente et al.

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— General comments —

The main goal of this work is to present the combined quality control methodology and the features observes in 2014 using HF Radar in Ebro Delta (NE Spain). The overall performance has been assessed for the operating year 2014. HF radar data have also been compared with independent in situ observations from a moored current meter for May–October 2014. Finally, monthly averaged current maps for 2014 have been detailed and showed that the HF radar properly represented basic oceanographic features previously reported, namely: the predominant southwestward flow, the coastal

clockwise eddy confined south of Ebro Delta mouth or the Ebro River impulsive-type freshwater discharge. These main features have also been confirmed through EOF analysis. As general comment, the work is very interesting covering from qualification to the use of HF radar for the Ebro Delta region. It is particularly welcome as the title can give the idea of a technical paper not exploring the collected observations. I recommend this paper for publication with only minor revisions related to below specific comments.

— Specific comments —

Introduction In the introduction, close geographical studies can be mentioned (Marmain's papers in Med Sea; Solabarrieta et al., 2014 in Bay of Biscay; ...).

Section 3.2 - p. 1922 / l. 13 Why in the qualification part, only May to October 2014 has been considered as for the exploration of current fields, the whole year is considered. Please mention some reasons for this choice.

Section 3.2 - p. 1922 / l. 27-28 A filter is applied on the data and then considered for validation. Is it possible to describe or to overveiw the quality of the unfiltered products ? Maybe it does not make sense due to the uncertainty in the measurements but then it has to be clearly mentioned.

Section 3.3 - p. 1923 / l. 23 In this sentence we wonder what is the nature of "raw radar time series" but it is explained later in Section 3.3 - p. 1924 / l. 8-9. Is it possible to detail it before ?

Section 3.3 - p. 1924 / l. 12 Could you define/quantify the "significant" portion (even if it is detailed later in the paper) ?

Section 4.1 - p. 1924 / l. 19- For non expert, would it be possible to detail a bit more in the text, for example, SNR3 (I noticed that it is mentioned in Table 1 but it would helpful to also have it in the test).

Section 4.1 - p. 1925 / l. 3 Following the same idea, could you shortly develop the

"limitations in the MUSIC algorithm" ?

Section 4.2 - p. 1926 / l. 28 The lag between minimum RMSE and correlation is clearly observed. Could you explain why there is this difference between the efficiency in RMSE and correlation ?

Section 4.2 - p. 1928 / l. 21-24 For the Taylor diagram (Fig. 7), results will be clearer to read and to interpret if you consider using the normalised (in standard deviation) version of the diagram. Examples are available in Taylor (2001) in Figure 5 or Figure 8.

Section 4.2 - p. 1929 / l. 21-25 In spectra, how do you explained a larger energy in high frequency (mainly CW spectra) in HF radars as the buoy has most probably an higher sampling frequency ?

Section 5 - p. 1935 / l. 22 In my opinion, numerical models provide a "quantitative" picture of the 3D dynamics.

As a general comment, it would be useful to have the three timelines of the measurements to see gaps in the time series.

— Technical corrections —

In Abstract: My Ocean IBI - IBI acronym to be detailed.

Figure 1: HFR1 and B1 not visible

p. 1941: belowlisted => below listed

p. 1941: Diagnose => Diagnosed