

## ***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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The ms faces an interesting topic - the quality control procedures for HF radars, and the bibliographic references seems to be updated and adequate. It uses some interesting approaches, based on the signal-to-noise ratios and other diagnostic parameters, as provided by the manufacturer monitoring software. however I feel this is also a major limitation and not a novel theme, especially for the SNR values that are used as qc metrics. if I am not mistaken, SNR in the manufacturer diagnostic files refer to the best-working range cell, and do not provide any significant "fine-scale details" on how these doppler lines values impact the accuracy of the final radar currents. Figure 2

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states "...The annual time serie of hourly SNR3 values for VINA site (d) reveals that the imposed thresholds of two standard deviations above/below the mean (bold blue dotted lines) are exceeded several times along June, reaching extremely low values which are related to a lower number of radial vectors provided by VINA site (e)..." this is not the correct interpretation - it should rather be the opposite: low snr values due to either noise, low-signal, interferences or whatever dictate the number of number of radial velocities - not the opposite. Cosoli et al 2012(b) investigated quite in detail the impact of SNR for the monopole on radar accuracies, suggesting that low snr constraints are a necessary-but-not-sufficient condition for spikes, and also the values of SNR at the two orthogonal loops should be investigated. Figure 3 and Figure 4 suggest the presence of significant distortions in the measured patterns, with presumable clustering of radial velocities along preferred directions. this is known to be a serious issues for DF radars and are blamed to introduce errors in the DOA estimates. effects are not taken into account nor mitigation techniques are described - this should be accounted for somewhere in the text. Figure 4 shows some directional errors, which however appear not to be statistically significant at the typical angular resolution and the comparison range - some discussion should be probably added. Figure 8 lacks confidence intervals for power spectra, should be added. An interesting EOF analysis is presented, with the complex-valued approach, though some Authors suggest to use the real-valued approach. They are presented as statistically significant- however no infrmation is given on the confidence levels or on the degrees of freedom to support this statement.

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