

## ***Interactive comment on “X-Band Radar for the Monitoring of Sea Waves and Currents: A Comparison between Medium and Short Radar Pulses” by Giovanni Ludeno et al.***

**Anonymous Referee #1**

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The authors presented a comparison of current and wave measurements using an X-band radar with medium and short pulses. I suggest the authors consider the following problems before the manuscript is published:

1. The writing in English needs to be comprehensively polished.
2. Title: Remove “the” and “of”.
3. Abstract:
  - 1) “This letter” should be changed.
  - 2) The contribution should be highlighted and clearly presented.

C1

4. Section 1:

The meaning of “Local method” may not be clear to some readers. Please replace it with specific algorithm (NSP. . .)

5. Section 2:

- 1) Table I, the resolution is 5 m, but it doesn’t correspond to the resolutions provided by the two pulses. Please explain how the resolution of 5 m is obtained.
- 2) The 1st sentence below Table 1, “extract the sea energy from the background noise” doesn’t make sense, please reword.
- 3) The MTF obtained from the data collected in other area was used, explain whether this is ok if the radar system is the same.

6. Section 3:

- 1) Whether the claim on the 8-9th lines is appropriate or not should be double checked.
- 2) Fig. 2, explain the reason why the clutter at the near ranges are so different in the two images.
- 3) Only the comparison between the results from two radar pulses mode was conducted. It is better to add ADCP and buoy results to Figs. 3-7 and investigate error statistics.
- 4) What are the RMS differences of peak wave direction and period and wave height?
- 5) Are the MTFs used for wave analysis the same for both short and medium pulse data?
- 6) How the calibration parameter for correcting the wave height results obtained by short and medium pulse modes should be explained in more details. In reality, if we want to use a radar in medium pulse mode, do we always need to determine such a factor using short pulse data?

C2

7) The data length is only about 1 and a half hours during which current and wave may not change too much, it may be better to augment the data length.

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