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Interactive comment on "A Simple Method for Retrieving Significant Wave Height from Dopplerized X-Band Radar" *by* Ruben Carrasco et al.

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The authors want to thank the anonymous referee #1 for his comments. We revised the manuscript as follows (colors refer to removed and added or changed text):

Referee Comment: *Page 1. Line 10: the Doppler effect is induced by all the movement of the water surface, not only orbital velocities. Although from the obtained results it seems that the orbital velocities were dominant in the Doppler velocity measurements*

Answer: The term 'radial velocity' here refers to the velocity of any scatterer in the

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view direction of the radar, sometimes also called 'line-of-sight' velocity. To avoid the chance to mix up the radial velocity with the wave orbital velocity the following was added in the revised manuscript:

Change: *In contrast to the backscatter intensity, the Doppler velocity measured by a coherent radar is induced by the radial velocity (or line-of-sight velocity) of the surface scattering and its periodic component is mainly the contribution of surface waves.*

Referee Comment: *Page 2. Line 4. The word "low" should be removed of this sentence, as, for grazing incidence conditions, the incidence angle has high values, close to 90 degrees.*

Change: Page 2. Line 3. *Towards grazing incidence (high incidence angles $> 85\,^{\circ}$) additional scattering mechanisms ...*

Referee Comment: *Page 3. Equation 1. The last member of the equation should not have a differential of the phase, as it is multiplied by PRF. This member is an approximation of the member in the middle. For a better mathematical notation increment of the phase instead a differential should be written. In that case, the last member would contain an approximation of the derivative.*

Change: Page 3. Equation 1.

$$f_D = \frac{1}{2\pi}\frac{\partial \Phi_{el}}{\partial t} \approx \frac{1}{2\pi}(\Phi_{el,i+1} - \Phi_{el,i})\ PRF \tag{1}$$

Referee Comment: *Page 6. The sentence in line 10 and 11 is not clear. Furthermore, the units of Tp are missing. Please, rewritten.*

Change: Page 6, Lines 9-11. *Apparently the wave heights obtained using Hwang's method are significantly overestimated in high sea states, due to the fact that high significant wave heights during storm situations are also associated with large peak wave periods* $>$ *10 s. In those cases a division by* ω_p $(< 1$ *for* $T_p > 2\pi)$ *strongly increases the radar estimated significant wave height because* ω_p *is smaller than one for long wave periods* $(\omega_p < 1\ rad/s$ *for* $T_p > 2\pi\ s)$.

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