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Nonlinear Processes in Geophysics
Discussions

Interactive comment on "Subharmonic resonant excitation of edge waves by breaking surface waves" *by* Nizar Abcha et al.

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We thank the reviewer for his thoughtful critiques of our manuscript. We have adopted all of his suggestions. Our point-by-point response to the comments and questions is given below.

(i) To have more confidence in claims' authors, it should be more useful to use frequency spectra of the surface elevation, namely to demonstrate quantitatively the period doubling and edge wave suppression. We have added a new Figure 3, where we show two frequency spectra. The first spectrum (Figure 3 a) is in absence of the breaking waves, where the first peak indicates the edge wave frequency and the second peak indicates the surface elevation frequency. The second frequency spectrum (Figure 3 b) is plotted in presence of breaking wave and indicates the suppression of

the peak for the edge wave frequency.

(ii) In equation (9) specify b* (complex conjugate). Added after Eq. (9): "b* is a complex conjugate"

(iii) In figure 1, plot axes z and y. Done.

(iv) What kind of wavemaker is used? Added on Page 3: "The flume is equipped with a piston type of wave-maker controlled by the computer", see also the caption to Figure 1.

(v) I assume that in figure 5 the solid lines fit the experimental data. The caption to Figure 5 (now 6) has been changed:

(vi) The English must be improved. The language has been corrected

Please also note the supplement to this comment:
http://www.nonlin-processes-geophys-discuss.net/npg-2016-63/npg-2016-63-AC1-supplement.pdf

Interactive comment on Nonlin. Processes Geophys. Discuss., doi:10.5194/npg-2016-63, 2016.

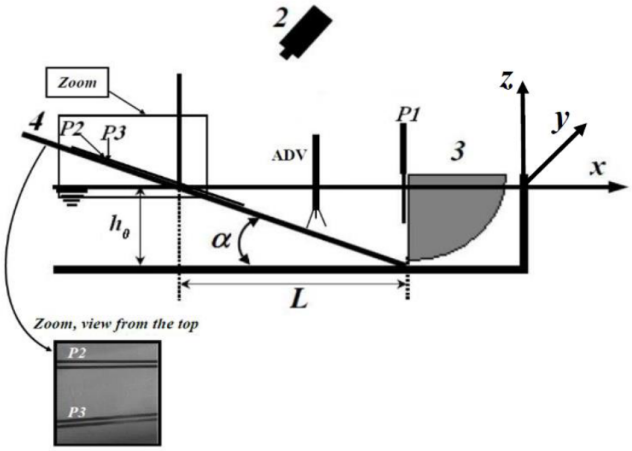

Figure 1. The experimental set-up: resistance probes: vertical (P1) and horizontal (P2, P3), a high-speed video camera (2), a wave maker of a piston type (3), an inclined bottom (4), and ADV.

Fig. 1.

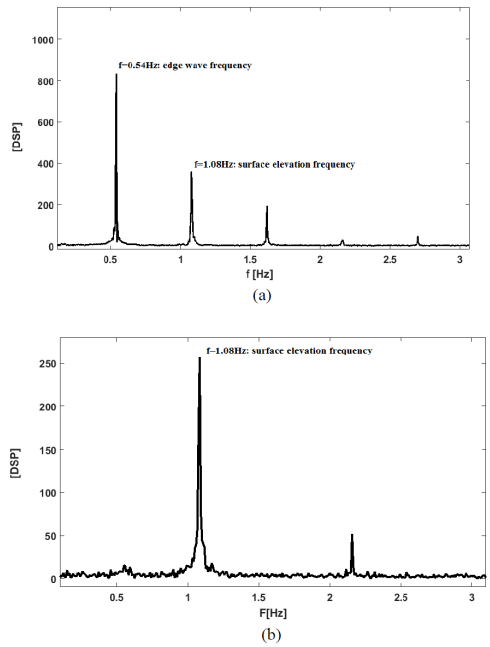

Figure 3. Power spectrum frequency: (a) in absence of breaking waves: the first peak indicates the edge wave frequency, while the second peak indicates the surface elevation frequency; (b) in presence of breaking waves: the peak for the edge wave frequency is suppressed.

Fig. 2.

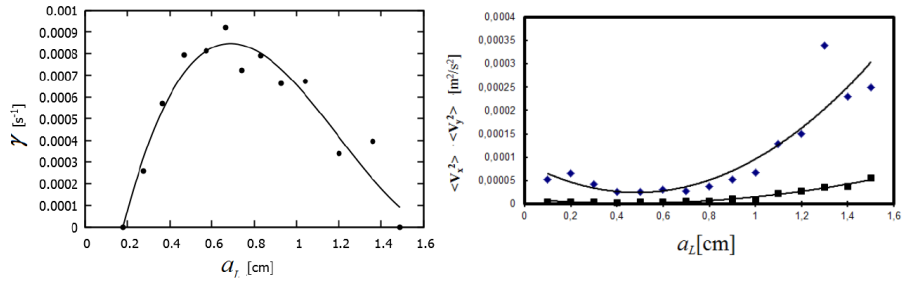

Figure 6. (a) Dependence of the exponential index of parametric instability γ on the surface wave amplitude a_L, shown by the black dots, and (b) dependence of the kinematic turbulent energy components on the surface wave amplitude a_L; V_x is shown by blue diamonds, while V_y is shown by black squares. Solid lines represent a fit to the experimental data.

Fig. 3.