

## ***Interactive comment on “Note on the directional properties of meter-scale gravity waves” by Charles Peureux et al.***

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The abstract is a bit technical and should be rewritten to emphasize the key finding of the note. The first sentence of the abstract is not very clear, in particular the expression “is bimodal for frequencies above twice the peak frequency”. Maybe the definition of bimodality should be given, since it seems that not everybody uses the same definition in the literature.

The main question of the reviewer is: what is the point of removing bound harmonics? For example, Romero & Melville studied bimodality without removing any bound harmonics. Consequently, the second part of the first sentence of the abstract is a bit misleading.

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Overall, I know that it is obvious for the authors but I am not sure that I always see exactly where the bimodality is present in the figures. For example, could the authors add some arrows in Figures 2 and 3, that match the text on Page 6, line 2 (“... detach from a main direction ...”)

Page 1, last line: the bimodality is caused by the nonlinear cascade of wave energy from dominant to high frequencies. So not by free waves?

Page 2, sentence lines 1,2,3: I do not understand the sentence.

Page 2, last line: “increasing away from the cameras ...” – to the left or to the right?

Page 4, line 11: there is a mixture of vectors and scalars (at least in the notation). Same in equation (6).

Page 7, line 23 and Page 8, second line of Caption of Figure 4:  $\alpha$  seems to have two different meanings. Please change the notation.

Page 8, Figure 4(a): Should there be a subscript “free” instead of “bound”?

Page 8, lines 6 & 7: circles and disks should be reversed.

Page 9, line 1: I do not understand where the  $k/k_p = 4$  comes from.

Page 10, equation (23): Should the integral be from  $-\infty$  to 0 ?

Page 11, Figure 6: the caption refers to equations (30) and (31), but these equations come after the reference to figure 6 in the text.

Page 12, line 5: using repeated twice

Page 12, line 18: I could be wrong but I am not sure that “occasion” is a verb in English

Page 13, line 11: What are these three main points? (I am lost)

Page 13, line 13: waves

Appendix page 14, equation (A1): why is the dispersion relation that of deep water? Is

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a factor  $1/N$  missing?

Figure A1 page 15: clearly say that the difference between the two figures is  $f$  (left) vs  $k$  (right). (a) and (b) do not even appear in the caption.

Page 15, line 2: "points checking" ???

Page 15, line 12 and caption of figure A1: use the same units for the velocity  $u_b$

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