We appreciate 3[rd] referee for the well-disposed review and try to improve the manuscript in accordance with comments made.

1. *My major objection to the manuscript is that the results of the comparison between the model proposed and the experiments are rather inconclusive. Apparently their model should be superior to all the others; however, for example in Fig. 2a, the model does not seem to fit well the experiments. The reason of this discrepancy is not explained in the text. Also in Fig 2b, the first two experimental points are well off the curve obtained from the model. It is quite difficult to state safely that the developed model is better than the others. I would suggest to discuss more in deep the comparison between experiments and the model.*

We recalculate the amplification of waves on adverse current presented on Figures 2, a,b in accordance with conditions of Toffoli et al. (2013) and Ma et al. (2013) experiments. Waves are generated in a still water and then undergo a current quickly raised to a constant value -*U*. (not gradually increased opposite current through entire tank as in previous simulations

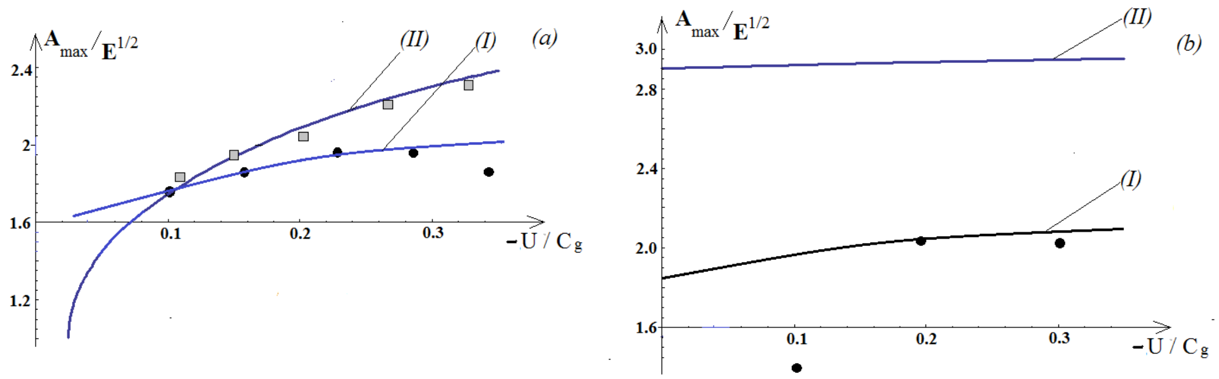

FIG. 2. Nondimensional maximum wave amplitude as a function of U/C_g, where C_g is the group velocity of the carrier wave and $E^{1/2}$ is the local standard deviation of the wave envelope.
(a) Experiments conducted by Toffoli et al. (2013) for carrier wave of period $T = 0.8s$ (wavelength $\lambda \cong 1m$), initial steepness $k_1 a_1 = 0.063$, and frequency difference $\Delta\omega/\omega_1 = 1/11$. Solid dots show measurements made using a flume at Tokyo University and squares show results obtained at Plymouth University. Line (I) shows the quasi-resonance model prediction while line (II) shows the prediction made using Eq. (2) (Toffoli et al. (2013)).
(b) Case T11 in Ma et al. (2013) for carrier-wave frequency $\omega_1 = 1Hz$, initial steepness $k_1 a_1 = 0.115$, and frequency difference $\Delta\omega/\omega_1 = 0.44 a_1 k_1$. Solid dots show measurements. Line (I) shows the quasi-resonance model prediction, while line (II) shows the prediction made using Eq. (15) (Toffoli et al., 2013).

Our simulations confirm that initially stable waves in experiments of Toffoli et al. (2013) undergo a modulationally unstable process and wave amplification in the presence of adverse current. Maximum amplification reasonably corresponds to results of experiments in Tokyo University Tank for moderate strength of current. Maximum of nonlinear focusing in dependence on the value of current is weaker compare to the modeling results of Toffoli (2013).

Experiments of Ma et al. (2013) (Figure 2b) deals with initially unstable waves. Results show that development of the modulational instability for a gentle waves in the presence of relatively weak adverse current ($U/C_g \sim -0.1$, see the first experimental point) is limited due to the presence of viscous dissipation. Our resonance-model simulations are in a good agreement with the experimental values for larger values of adverse current $U / C_g \sim -0.2 - 0.4$. Results of Toffoli et al. (2013) notably overestimate the maximum of wave amplification.

The characteristic spatial scale used in developing the BF instability of the Stokes wave is lc/ε2 , where lc = 2π/kc 5 is the typical wavelength of surface waves (Benjamin and Feir, 1967). We consider long-scale slowly varying current U(x) with horizontal length scale L of the same order: L = O(lc/ε2). iv. It is assumed that the U(x) dependence is due to the inhomogeneity of the bottom profile h(x), which is sufficiently deep so that the deep-water regime for surface 10 waves is ensured; i.e., exp(−2kch) □ 1. The characteristic current length L at which the function U(x) varies noticeably is assumed to be much larger than the depth of the fluid, h(x) □ L. Under these conditions, U(x)h(x) is approximately constant, and the vertical component of the steady velocity field on the surface z = η(x) can be neglected. This velocity field is directed along a tangent, and the slope of the tangent in the cases considered is negligibly small; i.e., η 0 15 (x) □ 1. Correspondingly, it follows from the Bernoulli time-independent equation that the surface displacement induced by the current is small (Ruban, 2012). Such a situation can occur, for example, near river mouths or in tidal/ebb currents.

2. *Why do the authors name the model as “resonant”? The modulational instability in one horizontal direction is not a resonant process but a quasi-resonance. Does the presence of a current make it exactly resonant?*

We absolutely agree with this comment: the quasi-resonant process with some detuning from conditions of strong resonance takes a place and without current and in the presence of current. Taking into account the distortion from exact resonance conditions is critically important to predict the energy exchange properties and nonlinear dispersive properties of interactive waves. Corresponding corrections are made in the text of manuscript.

3. *Paragraph (iv page 181) is taken entirely from Ruban (2012); this is not a major problem, but I just do not understand the reason of this choice.*

We are so sorry to reproduce the explanation for “classical” shallow water approximation for a large scale stationary horizontal current made by Ruban (2012). The reason for this choice was physical evidence and practical applicability of assumed approximation. We shortened the entire peace of text and slightly changed the context.