

Unfortunately, the authors' explanations on the calculation of the nearshore IG wave height did not alleviate my concerns. I now understand how the authors conducted their calculations, but I still do not understand the underlying reasoning. I am actually now convinced that it is incorrect.

[... the paper ] still contains some incorrect reasoning which in my view needs to be corrected (or removed) before publication.

[...]

The first part of the idealized modelling exercise leads to an estimate of the incoming IG wave height at the short wave breakpoint (called  $H_{max}$  in the manuscript), which is located in about 10 m depth for the conditions considered here. This I can follow and it makes sense to me.

What does not make sense to me is how the authors use this  $H_{max}$  (defined in ~10m depth) and a reflection coefficient  $R$  defined near the shoreline (so much more onshore, let's say in ~1m depth) to define the incoming wave height near the shoreline  $H$ , i.e. why it would make sense to assume that  $H=R \cdot H_{max}$ .

The reflection coefficient  $R$  is a function of the incoming and reflected wave heights at the location where this reflection coefficient is defined, in that case near the shoreline. While I agree that  $H$  in 1m depth will somehow depend on the wave height  $H_{max}$  more offshore, there is no straightforward relation between the two as far as I know, and the reflection coefficient  $R$  in ~1m depth cannot be used to express how the incoming wave height decays between 10m and 1m depth.

We thank the author for taking their time to review our manuscript again. We agree that the calculations of the wave height near the shoreline,  $H$ , can be improved and have done so in this revision. In this revision, we shoaled the infragravity wave as a free wave (i.e. with Green's Law) shoreward from carrier wave breakpoint - where we ended in the previous version of the manuscript - to the infragravity wave breakpoint. We then calculated the breaking profile of the infragravity wave from its breakpoint to the shoreline using the energy equation for linear long waves, which accounts for energy dissipation due to wave breaking. This method is also used in von Dongeren et al. (2007), the reference from which we've used two key equations in the model. We then take  $H$  as the infragravity wave height at the shoreline, and use this  $H$  to find our reflection coefficient,  $R$ , in the same manner as done by von Dongeren (2007). Although the physics of reflection is not included, the model should nonetheless predict, in a relative sense when comparing the two cases, the wave height value near the shoreline. Using this improved method, we find for our key results that  $H = 0.88$  m and  $H = 0.52$  m for  $T = 25$  s and  $T = 10$  s, and  $R = 0.79$  and  $R = 0.42$  for  $T = 25$  s and  $T = 10$  s. Note that in the revised manuscript, we reported these values as the amplitude,  $a_{ig} = 1/2H$  rather than  $H$  to be consistent with the other text. These values turned out to be comparable to the previous values of  $H = 0.71$  m and  $H = 0.38$  m for  $T = 25$  s and  $T = 10$  s, and  $R = 0.89$  and  $R = 0.49$  for  $T = 25$  s and  $T = 10$  s, and thus the key points of this section were not changed. Furthermore, we have made a naming change of  $H$  to  $H_{ig}$  and  $H_{rms}$  to  $H_{rms,ig}$ , to make clear that these are variables relating to the infragravity wave and avoiding confusion with incident waves. We have also corrected a mistake in the previous version of the manuscript as the wave height available for runup should be  $RH$  instead of just  $H$ . In addition, we have rearranged the model description section to read from offshore to onshore. Aside from this rearrangement, the changes in this revision are in lines 342 to 373.