

We are grateful for the Editor and the referees for re-reading our manuscript and for the insightful and highly useful comments. We also thank Referee #3 for recommending the acceptance of the previous revised version of the manuscript. Below we reply to the issues raised by the Editor and Referee #1.

Comments from the Editor:

“Your laboratory values of parameters space do not tell the reader what may happen in a fjord that they are interested in. I do not think that you need to predict behaviour in all fjords, but you should say in what contexts your results could apply and in those cases what behaviour may be expected. Where do the results from Parsmar and Stigebrandt fit in with your results. "If the result were presented in a non-dimensional way, so they could be used by the ocean community" OS could be suitable. I wonder how the excess damping (obstacle compared with no obstacle) may depend on the amplitude(s) of the internal modes generated or their energy (input) relative to the surface wave. NB in the table of parameters, row for h, it should read (=H2).”

Comment from Referee #1:

“The issue here is that the authors admit that it isn't new that a sill dampens a seiche – that's what the paper cited shows – so what is then the point of showing that in the lab? The mechanism isn't new.”

“...for example, where does the results from Parsmar and Stigebrandt fit in Figure 4? If the result were presented in a non-dimensional way, so they could be used by the ocean community, there may be mileage in the paper.”

Combined response:

Based on the above comments of the Editor and the Referee, we added an entire new section (Section 4, Discussion) in which we discuss the implications of our findings to natural seiche fjord systems, and compare our results to natural examples in terms of nondimensional quantities.

We indeed admit that certainly “it isn't new that a sill dampens a seiche” as the Referee put it, however, the fact that in this geometry the excited interfacial internal waves follow a linear dispersion relation (fairly well) despite their non-negligible amplitudes is probably of relevance for the community. The findings imply that in this particular setting nonlinear corrections to internal wave velocities are not necessary, even if the wave amplitudes are relatively large and the forcing period is small. We believe that this is important for the case of sill fjords with short seiching periods, and we hope that this result (as expressed in terms of nondimensional quantities) contributes to the better understanding of such systems. We tried to emphasize these connections in the new section.

Unfortunately, however, it was unclear to us how the Referee wished to connect the results of Parsmar and Stigebrandt to Fig.4 of the manuscript, which shows the space-time plots from the experiment, and primarily serves as a qualitative demonstration of the wave propagation in the system in case of two modes.

We also carried out an analysis comparing the interface-surface amplitude ratios to the nondimensional damping coefficients, as the Editor suggested, and discussed the possible relationship that may connect these ratios to the one observed in the case of the Gullmar fjord.

The typo discovered by the Editor has also been corrected.