

**Referee's Report**  
**on the paper by Kwok Wing Chow, Hiu Ning Chan, and Roger H. J. Grimshaw,**  
**Modulation instability as a generation mechanism for internal oceanic rogue waves: A**  
**modelling and computational study**

I received for review, apparently, the revised version of the paper, whether the majority of questions have been addressed. The paper in its current form looks fine, interesting, and is acceptable for publication in the journal NHESS. However, there are few minor issues which should be further addressed to make the paper clearer for readers. There are:

1. The paper title sounds too general, whereas the authors in this brief communication report an interesting discovery that the modulation instability of internal waves in a smoothly stratified fluid with a constant buoyancy frequency can occur in the shallow-water limit, when  $kh < 0.766n\pi$ , in contrast with surface waves, where the modulation instability can occur when  $kh > 1.363$ . I would suggest to replace the title with something like this: "Modulation instability of internal waves in a smoothly stratified shallow water with a constant buoyancy frequency". The relevance of the paper to rogue waves can be announced in the abstract, not necessarily in the title.
2. The authors present the nonlinear Schrödinger (NLS) equation for internal waves without derivation. This looks fine for the brief communication, however I would emphasise somewhere that it is assumed that the boundary conditions on the water surface is assumed in the fully nonlinear form. Namely this leads to the nonzero nonlinear coefficient in the NLS equation, because the hydrodynamic equations for internal waves with a constant buoyancy frequency are linear.
3. In this paper the authors do not use the full version of Taylor–Goldstein equation with the mean shear flow, but only its reduced version when there is no flow. I am suggesting to replace Eq. (2) with the standard equation for internal waves.
4. In Section 3 it would be useful to mention that the authors solve numerically the NLS equation (4).
5. It is not clear, what are the dimensions of parameters in Figs. 1 and 2? It would be good also to have an estimate for the dimensional maximum growth rate of modulation instability for the first few modes and given buoyancy frequency for  $h = 500$  m.

Yury Stepanyants.