

Revised title: Hydrographic Transformation of the Persian/Arabian Gulf Outflow over Rough Shelf Bathymetry in the Gulf of Oman
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The authors have placed a greater emphasis on the core of the study, the water mass modifications of the P/AG outflow. They have produced more details about the data processing (CTDs) and added some useful calculations of derived quantities (L_T , K_v , c_i) that help strengthening the discussion about turbulence, mixing and flow evolution along the shelf. Overall, I find the manuscript significantly improved, more focused, and most importantly, more convincing. Consequently, I recommend the manuscript for publication after bringing some answers (and modifications if needed) to the following comments:

Fig. 3a: The authors states that, L_T , must pass several criteria found in the literature to be validated: vertical coherence, density-noise threshold (please, provide its value along lines 152-154), overturn ratio criterion. Consequently, I would expect that, on such a wide section, many areas would failed passing those criteria (= L_T undefined), or L_T would be zero because the fluid is stably stratified. However, Fig. 3a exhibits $L_T >= 2$ m everywhere, how can that be ?

Fig. 2d: in the same vein, $N^2 < 0$, everywhere below 400 m. This seems suspicious. Here too, even though this N^2 is calculated with a coarser vertical resolution as done for L_T , some threshold should be taken to validate that N^2 is indeed negative.

Minor comments:

l. 127: ‘Positive N^2 identifies candidate static instability or density inversion’ ... a bit misleading, positive N^2 = stable while $N^2 < 0$ = unstable

l. 189 – 190: ‘... are unavailable, c_i is not an observed Froude number but a hydrographically derived speed scale that can be compared...’ Confusing! A few lines above, c_i is correctly defined as a phase speed. Suggested change: ‘... are unavailable, the Froude number cannot be estimated but c_i , calculated from hydrographic properties, provides a velocity scale that can be...’

l. 191: The decrease in g' due to dilution could possibly balanced the increase in H . in Fig. 3c, it seems that the expected decrease in g' due to water entrainment, has no impact on c_i (e.g. between station 50 and 60). Thus, I was wondering how g' was really calculated ?