

Interactive comment on “An improved parameterization of tidal mixing for ocean models” by A. Schmittner and G. D. Egbert

Anonymous Referee #2

Received and published: 8 November 2013

This manuscript describes modifications to the St. Laurent, Simmons and Jayne, 2002: Estimating tidally driven mixing in the deep ocean., *Geophys. Res. Lett.*, 29, 2106. Although, oddly, that work is never cited in the paper. For example on the last line of page 4478 and continuing over to line 1 of page 4479, it is stated that the UVic model uses the Simmons et al. (2004) tidal mixing parameterization. This is incorrectly stated. The UVic models used the tidal mixing parameterization of St. Laurent et al (2002) as implemented by Simmons et al (2004). This should be corrected where it also occurs on line 16 of page 4481.

The word "greater" is misspelled on line 14 of page 4481.

The ETOPO20 dataset needs a reference on line 24 of page 4482.

C1905

The sentence (lines 8-9 of page 4486) "This indicates that models using the JS01 are inferior to the using ER03." is an overly strong statement. It is only true for a few of the metrics you compared. There are a large number of other metrics that could have been tested...temperature, salinity, heat transport, Antarctic Circumpolar Current transport, and many, many others. The sentences needs to be rephrased to indicate that for a very metrics, the models with ER03 vs JS01 appear to work marginally better.

Line 10, page 4489, it is actually Figure 12 that is being referred to, not Figure 11.

Line 20, page 4489, "Our new parameterization..." The parameterization presented here is not "new", it is a modification to the St. Laurent et al. (2002) one.

Line 22, which Simmons et al. (2004) reference is being referred to here, a or b?

Interactive comment on Geosci. Model Dev. Discuss., 6, 4475, 2013.

C1906