

Interactive comment on “Propagation and dissipation of internal tides in the Oslofjord” by A. Staalstrøm et al.

Anonymous Referee #3

Received and published: 23 March 2012

This manuscript describes internal tide observations in Oslofjord, estimates energy fluxes, and infers dissipation rates and mixing efficiencies. It is an ambitious task given the dataset available but the authors have made a good attempt at calculating some robust values. However, there are some assumptions that need to be clarified and methods refined before the paper is suitable for final publication.

Specific comments:

Page 317, Line 3. “takes” Line 8. “where especially dissipation near the sill is studied” Rewrite

Page 321, Line 7. Cut “a” Line 17. Cut “nearly” Line 19. Add “the” before “changing”

Equation 11. This should be E_k not E_p I think

C95

Page 330, Lines 8-10. These PE/KE ratios seem very low. The analysis should be double checked.

Page 333, Line 13. “300 kW” the energy flux must have been horizontally integrated to get this value. What are the integration limits? I assume it is across fjord, but what evidence is there that the mooring location is representative of the whole across fjord section?

Page 334, Line 6. “propagates” Line 20. “4000 kW” Where does this value come from?

Page 337, Line 8. Add “other” before “processes” Line 9. Cut “Like” Line 11. Replace “in” with “at” Line 14. What local processes?

Page 338, Line 6. Replace “annihilates” with “cancels out” Line 9. Replace “Great” with “Large”

Page 339, Line 2. “backwards” or “reverse” may be better words than “negative” Line 4. Cut “density” Lines 9-10. It should be possible to diagnose standing waves from the observations. See Martini et al. (2007, GRL).

Interactive comment on Ocean Sci. Discuss., 9, 315, 2012.