

## ***Interactive comment on “Unpredictability of internal $M_2$ ” by H. van Haren***

**H. van Haren**

Received and published: 21 May 2007

Reply to comments raised by anonymous Referee #2 (osd-4-s77).

I appreciate the comments raised by the referee. I will try and improve the reading of my paper.

Specific comments: A very good comment. Indeed, if spatial variability is low it does not mean that  $M_2$ -motions cannot have [indirect] impact on internal wave induced mixing. However, what I meant to say was that it implies that  $M_2$ -shear is low, so that directly induced mixing (by  $M_2$ -shear) is unlikely. This will be mended accordingly in the revised manuscript. I will also reconsider the possibility that some of the S2 may be due to meteorological forcing, although I consider this quite unlikely, given the fact that most of the observations were made at great depths (deeper than 500 m; much deeper than the surface ‘mixed’ layer).

I consider the stating of values of confidence limits not really important, since they are

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shown in all the graphs. What I will do is indicate the effective fundamental bandwidths, which are of some importance for the interpretation of the spectra [to interpret the shifts in frequency]. Yes, the data sets are short, unfortunately. Naturally, it needs to be proven [using future data] how representative these data are, but on the other hand, there is no specific reason why the present sites are 'abnormal', e.g., the Bay of Biscay is one of the major internal tide generation sites.

I thank the referee for spotting the technical flaws. Corrections will be implemented in the revised paper as suggested.

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Interactive comment on Ocean Sci. Discuss., 4, 303, 2007.

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