

## ***Interactive comment on “A comparison between vertical motions measured by ADCP and inferred from temperature data” by H. van Haren***

**H. van Haren**

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I thank the referee for the comments. The abstract will be more explicit on the results, which are indeed in part negative, but which may be equally explained as positive. As for the specific comments: - Yes indeed, vertical currents are not easy to measure. However, an ADCP measures at an inverse aspect ratio of about 3, favouring  $w$  over horizontal current components, due to its slant angle of 20 degrees with respect to the vertical. Also, the instrumentation used in the North Sea and the Faeroe-Shetland Channel was fixed to the bottom, so that tilt variations were nil. A more thorough comparison between the  $\sigma_{\theta}$  error velocity and  $w$  is given now. This error velocity uses the redundant fourth beam and provides a direct estimate of  $\sigma_{\theta}$ ; vertical currents affecting  $w$  due to inhomogeneities across the beam spread. - They are clarified now, indeed as indicated by the referee. - The

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technical corrections are all implemented as suggested, thank you

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