

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

Anonymous Referee #1

Received and published: 5 June 2008

A comparison between vertical motions measured by ADCP and inferred from temperature data

Hans van Haren

General comments The paper considers two sets of measurements (one in a summer stratified continental shelf sea and the other of the passage of a near bed front at the shelf edge) where comparisons were possible between ADCP measured vertical currents and estimates from first order theory of time variations in the temperature structure. In neither case was the agreement particularly good (this is not immediately apparent in the abstract) and reasons why are discussed. The negative results do not negate the value of publishing the paper.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



Specific comments One of the difficulties in measuring vertical velocities with an ADCP is that they are a factor of (10^{-2} to 10^{-3}) smaller than the horizontal velocities at the predominant frequencies, so that any error in measuring or correcting for tilt, by as little as 1°, will cause large errors in the measured vertical velocities. There is no mention of this in the paper, if only to show that it was considered and was not significant in these cases.

It took me several readings to appreciate the two sentences lines 15-20 on p105, in particular that the agreement was good at the D2 frequency but the discrepancies referred to were above and below the D2 frequency.

Technical corrections Table 1 a) A minus sign has crept in to the longitude for the PROCS experiment. b) First bin is given as depth below mean sea level, I presume, whereas the (fixed) height above the bed would be more appropriate, since this is how the instrument works. This holds especially for the INP experiment where tidal variations will be significant. Similarly the tidal elevation variations are not shown in figures 3a and b.

Interactive comment on Ocean Sci. Discuss., 5, 103, 2008.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

