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Comment

## ***Interactive comment on “Summer upwelling at the Boknis Eck time series station (1982 to 2012) – a combined glider and wind data analysis” by J. Karstensen et al.***

### **Anonymous Referee #2**

Received and published: 30 April 2014

This article makes use of glider and wind data time series to analyze the impact on the water column of two upwelling events in a shallow coastal region of the Baltic Sea. The approach uses the potential energy before and after the upwelling events to measure the irreversibility of the upwelling process. This establishes the existence or not of diapycnal mixing during the upwelling event.

The article is well written and clear and the conclusions are supported by the results. From my point of view the article is ready for publication. However I would like to point out two minor comments that resulted from reading the article.

Minor comments:

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Page 2768 line 10. Discrepancies between satellite SST and in situ data are suggested to occur due to the coarse temporal sampling of the satellite. I would also add the fact that the SST imagery is a spatial average on the pixel size. Another source of discrepancy could be the proximity to the land border where satellite data is less accurate.

Page 2768 line 28 and Page 2773 line 7. I would briefly mention how far is expected to be the no lateral inflow hypothesis from reality.

Page 2770 line 2 and Page 2774 line 10. I think the role of turbulent mixing mechanism at the near sea surface (like waves) be also briefly discussed in the context of the experiment.

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Interactive comment on Biogeosciences Discuss., 11, 2759, 2014.

**BGD**

11, C1346–C1347, 2014

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