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Comment

## ***Interactive comment on “Transport of AABW through the Kane Gap, tropical NE Atlantic” by E. G. Morozov et al.***

**E. G. Morozov et al.**

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Reply of the authors to the comments of reviewers

The authors thank referees for their useful remarks. We joined our replies to three referees in one file. The file is attached. In the attached file: the comments by referees are in bold face; our replies are in regular face.

Reply of the authors to the comments of referee 3

The paper is very short, and certainly would have room to show the vertical and horizontal structure of the flow such as would be obtained from fully utilizing the CTD and LADCP data to support the conclusions as to velocity structure and total transport through the Gap.

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Now the paper is longer, More discussion is added.

There are also discrepancies between the conclusions drawn in the text, and the figures. For example, it is stated in both the abstract and the text that the maximum velocity reached in .21 m/s, yet the velocity time series in Fig. 5 does not show the velocity reaching this magnitude. Presumably this is due to the rotation of the velocity into an along-gap direction for the figure, but if so this should be clearly stated.

These values (0.21 m/s are related to the measurements with a 10 min sampling. The figure shows daily average data. This is clarified in the text.

The all-important transport results are not backed up by a suitable discussion of computational methods and error analysis. This is the potentially most significant result to come out of this data set, and needs a far more careful and transparent treatment than is given.

We explained the details how transport was calculated

Specific comments:

1. The abstract is too short, and fails to mention the most important result, which is the mean transport through the Gap, although it gives the variability.

The abstract is made longer and the zero mean transport is included.

2. The introduction needs to include a longer and more organized discussion of what is already known about the deep regional flow from the literature, and how the new observations will add to the body of knowledge in a significant way.

We widened the introduction

3. The measurements section suffers from a lack of organization, and should be divided into two sections. First, the data should be fully described, with locations of instruments and a mooring diagram (with bathymetry), computational methods, error analyses, etc. Then the next section should describe the results, and be greatly ex-

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panded to include all of the data available.

We wrote special section about the data and then a section of the data analysis

4. The conclusions, like the abstract, are too short and again fail to note the main result, the mean transport through the passage. The most important results should be better organized, and more fully discussed and compared with what was previously known.

We modified the abstract and conclusions

Please also note the supplement to this comment:

<http://www.ocean-sci-discuss.net/10/C345/2013/osd-10-C345-2013-supplement.pdf>

Interactive comment on Ocean Sci. Discuss., 10, 539, 2013.

**OSD**

10, C345–C347, 2013

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