

## ***Interactive comment on “Comparing the steric height in the Northern Atlantic with satellite altimetry” by V. O. Ivchenko et al.***

### **Anonymous Referee #1**

Received and published: 12 September 2007

#### General Comments

1. This paper focuses on the contribution of salinity and temperature to the changes in steric height and these are compared with changes in sea level from satellite. The length of the data set, for the calculation of the steric changes, is only 5 years long, but the authors provide good evidence that salinity changes do make a significant contribution to total steric height change and show that it is an important factor in basin scale and regional sea level change.

2. There needs to be more information on the data, for example the temporal resolution of Agro Float Data. Does the Atlimetry data have the inverse barometric correction applied?

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## Minor comments

1. There are a lot of definite and indefinite articles missing in the text.
2. p 2 line 5 The word “ a perspective” is probably not the best word. In this context, “ the possibility” might be better.
3. p2 line 21 Should be “ not necessarily true locally”
4. p2 line 29 Should be “Maes (1998) discusses different. . .”
5. p3 line 5 This is a paper rather than a note ?
6. p3 line 8 -10 The meaning of the sentence starting “For this reason. . .” is not clear and is poorly written.
7. p5 line 7-8 Sentence starting “The difference between this mean and. . .” is not clear. You are dealing with monthly anomalies from the mean seasonal cycle as described before. You have described this in the text and figure 2. In the figure you have mean “offset” between the ARGO and altimeter. Presumably this is what you are discussing here ?
8. p5 line 9 should be “  $r^2$  “
9. p 6 line 18 Replace “ studying” by “ for the study of “
10. p8 line 3 Replace “ depending” by “dependent”
11. p8 Line up from bottom of the page. Sentence starting “ Computing this part. . .” is rather clumsy and not clear. It does not seem to follow on from the previous sentences. ?
12. P9 Line 8 Should be “ North Atlantic “ ?

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13. Figure 1 Should be “ measurements per box”

14. Figure 2 should have units either on all panels or placed in the caption.

### Recommendation

Subject to the minor changes given above, the paper should be published in Ocean Science

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Interactive comment on Ocean Sci. Discuss., 4, 441, 2007.

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