

Dear Reviewer #1,

We are very grateful for attention to the manuscript and useful remarks.

We will certainly take into account all comments and all papers which recommended while manuscript revision.

We will also present an extended discussion of the obtained values of geostrophic volume flow rate of the AW, including a comparison with estimates of volume flow rate that are given in the other works.

Now we would like to clarify some comments: numbers 14, 15, 17 and 18.

Comment # 14.

14. Lines 382-396. Somehow the authors should take into consideration temporal change of water masses at the selected locations vs. spatial changes. They can do that by analyzing repeated NABOS CTD sections and compare temporal and spatial changes.

This comment is not clear to us. In Fig. 8 and 9 are given T, S -diagrams and vertical profiles, which are obtained on the basis of measurements NABOS09 (2009 year). The only exception is the T, S -diagram in Fig. 8c, based upon the section of PS-96; this case is specifically mentioned – lines 355–358. Using the sections (NABOS09), spaced apart, we analyzed changes in the characteristic features of BSBW (namely, the change in the amplitude of the “knee” (Dmitrenko et al., 2015)) moving away from St. Anna Trough. Such an analysis is similar to the analysis of the variability of the thermohaline structure of intrathermoclinic eddies as they move away from the region of their origin. It should be also noted that the “knee” (Dmitrenko et al., 2015), observed on T, S -diagrams for BSBW, is a typical feature of BSBW. Therefore, such a “signal” on the T, S -curves may indicate the presence of BSBW in a particular observation area.

Will You be so kind to explain, what additional analysis You mean in this comment?

Comment # 15

15. Line 411: Please repeat your conclusion here.

Unfortunately, this comment is not clear to us. The text of the manuscript on line 411 and near it states that intrusions in ocean can be one of the main mechanisms for the exchange and mixing of water masses.

Comment # 17

17. Lines 432-439: Method of defining the area is not well described

Will You be so kind to explain this comment in more detail.

Comment # 18

18. Table 1: Please include year as the third column for each line.

The first column of the Table 1 contains the year of measurements: for example, NABOS06 means that measurements were made in 2006. Can we explain this in the caption of Table 1, and not add the year as a separate column?