

Interactive comment on “The relative importance of selected factors controlling the oxygen dynamics in the water column of the Baltic Sea” by S. Miladinova and A. Stips

Anonymous Referee #1

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In my opinion, the figures added in the newest version of the manuscript (T and S at BY0 and BY1, T at BY5) are very interesting! They raise a few questions/remarks which I would like to see addressed by the authors.

1) The authors claim that because the seasonal cycles of temperature and oxygen match each other so well at the bottom of station BY0, biological sediment demand does not play an important part there, but that the picture is more complicated at station BY1. A way to get more insight into the impact of biological demand on the oxygen concentrations, is by calculating the Apparent Oxygen Utilisation (AOU). So is there any seasonality in AOU at BY0, BY1, and BY5?

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2) There does not seem to be a clear seasonality in the bottom salinity at BY0 and BY1, whereas temperature does exhibit a strong seasonal variation at these locations. This suggests that the picture of a seasonal variation in the inflow of North Sea water is incorrect: if there would be such seasonal pulses of North Sea water, then one would see a seasonal cycle in both temperature and salinity. Rather, it seems that the inflow of North Sea water is quite constant (with some pulses at random points throughout the year) and that the seasonal variation in the temperature of the water only reflects the fact that the North Sea is colder in winter than in summer.

3) In November 1999 and in December 2001, both temperature and salinity seem to increase suddenly at station BY5, whereas in February 2003, salinity increases, but temperature decreases strongly. What would be the reason for these different behaviours?

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