Note: the **comments** and **authors' replies** are in font color of **black** and **blue**, respectively. All changes in revised manuscript are highlighted using yellow background.

RC1

I see the authors made a major revision of the original manuscript addressed all of my comments and criticism. I am satisfied with this new version of the manuscript. I recommend it to be published. Maybe better for authors to check carefully one more time the language, figure and table captions and notations of equations.

I do not have further comments. Well done, nice work,

Reply: Thanks a lot for your suggestion of acceptance. We have checked carefully the manuscript to erase the mistakes/confusions in language, captions of figures and tables.

RC2

Here are some minor suggestions on the revised manuscript.

Line 132: I recommend adding the accuracy and resolution of measurement instruments (HOBO Loggers, YSI salinometer etc.) to the text or to Table 1.

Reply: We added accuracy to the text.

Line 233: it is better to use g/kg instead of PSU for salinity, because PSU definition suggests oceanic salt composition

Reply: Thanks, the unit g/kg is the same as PPT or ‰, so we changed it to ‰.

Line 345-352: What are the external factors leading to the specific heat budget in 2017? From Fig. 8 one can conclude that the under-ice solar radiation was lower than in other years. Was it the main reason for the general cooling of the water column? Was the low light penetration caused by the snow cover or by other reasons? The information is missing in the paragraph.

Reply: Thanks for your reminding. Yes, the general cooling of the water column was caused by the negative heat balance, I mean the penetrated solar radiation is smaller than the heat release by Fw. The low light was caused by the snow cover, as well as the thicker ice cover compared with other winters since the ice also absorbs solar energy. We added this info to the paragraph.

Line 478: make the word "Lake" lowercase

Reply: Corrected accordingly.