

Interactive comment on “Warming of waters in an East Greenland fjord prior to glacier retreat: mechanisms and connection to large-scale atmospheric conditions” by P. Christoffersen et al.

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This manuscript presents a comparison of two hydrographic surveys in KF, one taken in 1993 and the other in 2004. The waters in the fjord, both surface and deeper, warmed over this time period. In addition, the KG also retreated in 2005, subsequent to the warming. From the data set alone, it is difficult to say when the waters in the fjord warmed. The authors use an ocean reanalysis to interpolate the water properties on the shelf and near the fjord mouth in the years between 1993 and 2004, and see a gradual warming of waters near the fjord. The manuscript also carries out an extensive discussion of the IL and nicely shows how the longitudinal and latitudinal position of

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the low relates to the geostrophic wind along the east Greenland coast.

One comparison I had expected to see in the manuscript was a direct comparison of the modeled T/S profile at the mouth of the KF in 1993 and 2004 against the reanalysis output from the NEMO model, as this would provide strong support for the model's ability to capture water masses at that critical location. I think such a plot (whether it turns out to be accurate or not in terms of model vs. obs.) would be an important component of the study, and therefore should be included.

Minor Pts:

Line 55: "increased".

Line 127: Not sure why "NOAA" is mentioned.

Section 3.2 Add "Ocean Reanalysis" to the subtitle heading.

Figure 3 caption: "circules".

Figure 4 caption: "measured".

Interactive comment on The Cryosphere Discuss., 5, 1335, 2011.

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