

## ***Interactive comment on “Volume and temperature transports through the main Arctic Gateways: A comparative study between an ocean reanalysis and mooring-derived data” by Marianne Pietschnig et al.***

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I conclude that the bottom line of the authors answer is that they repeat their argumentation from the manuscript. They confirm again that they know that “heat transports” through individual sections are thermodynamically wrong and thus meaningless expressions - and thus they propose to remove them from one figure. Nevertheless, they propose again to present such numbers (in a subsection??) because it is nice to compare them. They now propose to use a different reference temperature, which obviously has nothing to do with the general problem. The Arctic mean temperature is

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as good or bad as any other reference temperature and just gives different but still arbitrary comparisons. Consequently, also with this reference temperature, no conclusions can be drawn on the role of individual straits for warming or cooling the Arctic Ocean. The role of an individual strait can be concluded from the heat transport divergence of that strait. For the issue of comparing false “heat transports”, see paragraphs 3 and 4 of my comment SC1. For the issue of “heat transports” in the oceanographic literature, see paragraph 5 of my comment SC1. For the issue of comparing observations and model results for individual straits, see paragraph 7 of my comment SC1.

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