

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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Dear referee Takao Kawasaki,

Thank you very much for posting your reviewer comment. Please see below our response to each of the issues raised.

Issue 1: The authors showed the total heat budget of the Arctic Ocean based on the observation (153TW; OBS) in the period from September 2005 to August 2006. Is this value expected as normal one or significantly particular one? Can the authors

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infer and discuss based on the long-term mooring dataset (e.g., at the Fram Strait; Beszczynska-Möller et al., 2012)?

Answer: We will include a comparison to long-term estimates presented in recent literature. We can also compare the reanalysis value (145 TW) to a longer time series from C-GLORS.

Issue 2: To directly compare the temperature is better for validation of OBS or reanalysis dataset. What does seem sure is that the “temperature transport” defined in this paper should not be used.

Answer: We will remove the section under discussion from our manuscript but keep the net heat transport and the temperature distributions, both of which we will discuss in more detail.

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