

# ***Interactive comment on “Heat Transport Pathways into the Arctic and their Connections to Surface Air Temperatures” by Daniel Mewes and Christoph Jacobi***

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Dear Dr. Caballero,

we would like to thank you for the comments and ideas to improve the manuscript. We will carefully take them into consideration in a revised version of the paper.

The reviewer raises an interesting concern, when stating that the manuscript does not give much insight into physical mechanisms. However, our purpose was to investigate the possibility of using another method in analyzing the transport. Nevertheless, we will investigate the consequences for climate dynamics and discuss them in a more

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comprehensive manner.

The goal of the work is focused just on the ‘internal’ heat transport, because we wanted to further clarify the concurrence of respective transports and surface temperatures. But, it is planned to redo calculations of the vertical integral (see answer to RC 1). Nevertheless, previous experiments have shown, that the general shape of the patterns are similar between different transports.

We will include more description on why and how we gathered the clustered data further. We chose SOM over k-means, because it has shown promising results in previous studies (e.g., Cassano et.al 2006). Further we think that the patterns emerging from the SOM are easier to relate to each other compared to the k-means. The SOM will inherently preserve the topology of the original data. However, for small numbers of clustered patterns the SOM behaves similar to the k-means. We will discuss this in more detail in revised version.

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