

Interactive comment on “The MOSAiC ice floe: sediment-laden survivor from the Siberian shelf” by Thomas Krumpfen et al.

Thomas Krumpfen et al.

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Dear Reviewer 1,

thank you very much for your helpful comments and suggestions. Your feedback is very much appreciated.

We agree with the fact that the method description is sometimes a little short. This has also been noted by the second reviewer as well. We will go into more detail at the points you mentioned.

With respect to your major comments made:

1. Missing details for snow and ice thickness measurements

C1

We agree. The revised manuscript will better describe the methodology (+ uncertainties) to derive thickness from GEM and how surveys were aligned with snow samples obtained along track.

2. Missing details and uncertainty estimates for back trajectories

In the revised manuscript, we will include a discussion about uncertainties of the various products, both, in summer and in winter. Moreover, we will include a comparison of real buoys with IceTrack trajectories to outline the performance of the Lagrangian approach and number uncertainties related to the identification of the source areas.

3. Ambiguity regarding use of high resolution satellite data to validate back trajectories

This aspect will be better described in the revised manuscript. Since the MOSAiC floe itself was difficult to identify on single images, large scale patterns (ridge systems etc) of several tens of kilometers were tracked. The description will be revised. Thanks for the hint. Together with a better description of the uncertainties of the applied motion data (comment 2), this should give the reader a better understanding of the limitations of the applied methods

4. Location of Haas and Eicken data relative to study region

We will either better describe location or, if possible, include positions in one of the maps. We agree that profile length of surveys carried out by Haas and Eicken must be provided.

5. With respect to all other comments:

Thank you very much. We will take all minor comments into account.

Once again many thanks for the careful revision of the manuscript and valuable feedback.

With best regards on behalf of all co-authors Thomas Krumpfen

C2

