

Interactive comment on “Repeated ice streaming on the northwest Greenland shelf since the onset of the Middle Pleistocene Transition” by Andrew M. W. Newton et al.

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Dear Editor and Authors, It has been a pleasure review your manuscript ‘Repeated ice streaming on the northwest Greenland shelf since the onset of the Middle Pleistocene Transition’. I find the manuscript in a very good shape and ready for publication after minor revisions. This manuscript constitutes an important contribution to our understanding of glacial-related systems. In addition, future ice sheet models can take advantage of the insights provided here. My main concern is regarding the consideration of the seismic horizon gridded maps as palaeo-seafloor maps. Even though, we make this extrapolation often, it should be mentioned in the manuscript that the

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maps of the palaeo-surfaces presented have not been backstripped or decompacted. Therefore, variations with respect the original morphology of the palaeo-seafloor are expected. In addition to this, I would appreciate to see the seismic profiles and maps without the overlapped interpretation (e.g. Fig. 2, 3, 5 and 6). Perhaps the same sections of the profiles can be included as supplementary material that the reader can check if needed. Finally, I have a few minor suggestions that can perhaps contribute to the improvement of the manuscript. Line 12: They are actually 6 sets of landforms considering the ones of the seafloor previously described. I suggest to rephrase this sentence to include them all. Line 30: Here and elsewhere you include important information in brackets. I suggest to limit the brackets and include these statements within the main text. Line 33: I know there are many examples, but could you give a couple of main references in case the reader wants to check other works? Lines 35 to 41: This sentence is long and difficult. Could you split the information here? Line 55: How this fit with Knutz et al., 2019 and the ice advance at aprox. 2.3 Ma? Lines 71 to 73: Perhaps this part fits better in the Introduction section feeding the discussion regarding the lack of previous evidences. Here you can develop further (2-3 sentences) the description of the seafloor MSGSL which can become more important in the discussion regarding the change in time of the MSGSL patterns. Line 77: Knutz et al., 2019. There are any previous references on this? Line 96: Please clarify that the surface maps have not been backstripped or decompacted and these processes can have an important impact in the original morphology, particularly on the deepest sections. Lines 102 to 103: This is close to interpretation. Line 105: It would be very interesting to have a more accurate age model. Perhaps, the future drilling proposals help on this. Lines 113 to 114: This is also interpretation. Can be somehow moved to the discussion, so you keep here plain description? Line 115: e.g. There are more works focus on MSGSL. Line 165: Newton et al. A short description of the seafloor MSGSL should be included in this work too. Line 193: cannot not? Line 196: (1 Ma) onwards. Add the age information.

Congratulations for the well-done work. Best Regards, Lara F. Perez

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