

## Response to Editor Report on “Multi-decadal retreat of marine-terminating outlet glaciers in northwest and central-west Greenland”

Report received: 24 January 2022

Key:

*Report comment (blue italics)*

Response (black)

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*1. add the suggested discussion on what additional information would be needed to more conclusively reveal the primary driver(s) of glacier retreat*

We added a sentence to the conclusion addressing additional information (mélange, oceanographic data) that would be helpful in clarifying the primary drivers of glacier retreat.

We apologize for not previously addressing the comments from the initial editor review, this was an oversight.

*2. change the color map of Fig.1b to be more scientifically accurate. Although I know it is a common format, rainbow maps should never be used. For the motivation of my comment and potential solutions, check: <https://www.nature.com/articles/s41467-020-19160-7?s=09>*

We have changed the color map to the matplotlib ‘plasma’ color map, which is perceptually uniform. We also note that in all other figures in this paper, color had been carefully chosen to be scientifically accurate.

*3. Fig5b. it is not fair to include the break-points even if no break-point is detected as it is a logical statistical artefact to have more fake break points in the middle of the time series. These not-significant breakpoints should be removed from the analysis.*

We added an F-test to determine whether the piecewise-linear fit (with breakpoints) is statistically better than a linear regression (without breakpoints) for each glacier, and discarded breakpoints that failed the F-test. We added a description of this process to the methods section, and updated Figure 5b and the breakpoints in Supplementary Table 3 accordingly.