Review of manuscript 'Proglacial lakes substantially modulate the surface mass balance of deglacial ice sheets' by Sijbrandij et al.

Dear Sijbrandij and authors,

I would first like to thank you for the effort you have put into addressing my comments, questions and for your revisions to the manuscript. I thoroughly enjoyed re-reading the revised version and think it is now much clearer throughout. I believe this is a really valuable contribution to our understanding of proglacial lake-ice sheet-climate interactions, and it is certainly a piece of work that I will return to in the future. I only have a few very minor technical corrections, which I detail below, and I look forward to seeing the final published article.

Line 2 – 4: Maybe the second and third sentences of the abstract could be switched around. Then you would first introduce the complexity of the relationship between proglacial lake and ice sheet retreat and then explain the mechanism of that complexity. It would also then lead nicely from the possible regional climate influence -> your attempts to quantify this influence in the fourth sentence. This is not something I have a strong opinion on though, so feel free to ignore.

Line 15-47: The first paragraph is quite long and I find myself get lost a little bit in the details. I would recommend trying to split this into two paragraphs.

Line 16: "large proglacial lakes (PLs) ~~have~~ evolved along the margins"

Line 27-29: "For the deglaciation of the Laurentide Ice Sheet, ~~the~~ coupled simulations with an Earth system model of intermediate complexity from Quiquet et al. (2021) suggest that proglacial lakes cause additional mass loss of 3000 Gt per year, which ~~however~~ likely overestimates the dynamic effect

Line 54: There seems to be an issue with your "ø". I would just make sure when this goes to the copy editing stages that the correct character is used.

Line 142: Please make "East" lowercase.

Line 228: The citation of Quiquet et al needs brackets.

Line 240: "(Dyke, 2004; Margold et al., 2018; Dalton et al., 2020; Norris et al., 2024, e.g.)" Move e.g. to the start of the brackets.

Line 234-242: This sentence is quite long because of the colon and seems to contain a few different ideas that make it tricky to follow. I would recommend splitting it:

"However, sensitivity studies also reveal that the strength of the dynamic feedback strongly depends on complex processes and poorly constrained basal boundary conditions, including basal friction, ice–lake interactions, glacial isostatic adjustment, and changing lake levels or drainage events (Scherrenberg et al., 2024; Austermann et al., 2022; Hu and Haseloff, 2025)~~, which may be another reason why both~~ These factors may explain why both ice sheets exhibit a more heterogeneous retreat history in geological reconstructions than in the above simulations with ice-only models or models of intermediate complexity: The southern Laurentide Ice Sheet exhibits highly variable ice-stream configurations and periods of stagnation and readvance (Dyke, 2004; Margold et al., 2018; Dalton et al., 2020; Norris et al.,

2024, e.g.) and contrasting retreat patterns of the Fennoscandian Ice Sheet between Bølling–Allerød and Younger Dryas despite a continuous presence of the Baltic Ice Lake (Stroeven et al., 2016).”

This isn’t perfect, but splitting this sentence somewhere in the middle will make it easier to follow.