Dear Prof. Machguth,

Thank you for your decision to publish our manuscript, subject to minor revisions. We are pleased with the positive outcome and appreciate your feedback throughout the review process. Below, we outline how each comment has been addressed in the revised manuscript. Your comments are copied below in black, and our responses are provided in blue.

Throughout the entire manuscript, please change “impermeable” with "low-permeability" or "aquitards". None of the cited studies claim that ice slabs are fully impermeable. A fully impermeable state is very hard to reach and is also not needed to force a large fraction of the meltwater into ponding formation of slush fields and/or lateral surface runoff. This concerns lines 58, 452, 454 and 549.

We have replaced all instances of "impermeable" with "low-permeability" or "aquitards," as suggested. Specifically, changes were made on lines 58, 452, 454, and 549, ensuring consistency with the terminology used in the cited studies.

Line 65: “0.0495 km2” the readers might ask themselves why the delineation between small and larger features is such a precise number. You might indicate that this number corresponds to a certain number of 30 m Landsat or MODIS pixels for clarification.

We have added the following explanation to clarify the delineation between small and larger features: "Previously, the characteristics and behaviour of medium to large SGLs (defined as > 0.0495 km^2; where this value was inferred to correspond to the minimum lake size required to fracture to the ice-sheet bed (Krawczynski et al., 2009)), have been studied in single melt-seasons (e.g. Williamson et al., 2017, 2018a; Miles et al., 2017).”

Lines 92-93: This is a crucial sentence, however, I have the impression it needs to be adapted to reflect the revised study: it still says “ice flow”, although that part was removed from the manuscript (apart from mentioning potential linkage between surface meltwater and ice dynamics in the discussion). Also check whether "throughput" is the right word or a remnant from the previous focus of the study. In my opinion, this reminds more of water discharge, but your study now focuses on a rather detailed and thorough description of the spatial and temporal distribution of surface hydrology in two contrasting melt seasons.

We have revised the sentence to better align with the updated focus on hydrology. The revised sentence now reads: "Together, these data provide new insights into how a warming climate - where high melt years become the norm - may influence the spatial and temporal distribution of supraglacial meltwater features and the drainage dynamics of SGLs."

Lines 448 to 449: make statement clearer. “Minimum extent” over which area or region? Maybe instead of referring to your study, refer to your methodology, I assume you mean that "Our methodology of mapping slush from optical imagery provides a minimum bound for slush extent, …."

To improve clarity, we have updated the statement to: "As such, our methodology of mapping slush from optical imagery provides a minimum bound for slush extent, because the total slush area may be even greater than what we can observe from optical imagery alone."

Line 548: “surface properties”, consider replacing with "surface and firn" or "surface and near-surface"

We have replaced "surface properties" with "surface and near-surface," as suggested.

Line 554 “subsurface features”; above labelled "surface properties", here "subsurface features". Please check and make consistent.

To maintain consistency, we have removed the reference to "subsurface features," ensuring the terminology aligns throughout the manuscript.

We believe these updates address all your comments and improve the clarity and consistency of the manuscript. Thank you again for your careful review and helpful suggestions.

Best regards,

Emily Glen on behalf of all co-authors.