Reply to Referee 1:

We would like to thank Referee 1 for reviewing our manuscript and for their helpful feedback. We addressed the referee's comments in blue color.

The paper investigates the source, quantity, and spatial distribution of interfacial water before and during glide-snow avalanche release. As the liquid water at the snow soil interface is a key predisposing factor for glide avalanche release, this paper significantly contributes to the comprehension of this natural phenomenon. I really appreciate the efforts to observe and measure the snow and soil properties jointly, since together they represent a highly dynamic and connected porous medium.
The paper is well written, minor issues are listed below:

Line 12: maybe better "for the majority of the snow avalanches considered in the study" rather than four avalanches

We will implement this change.

Line 14: please specify what kind of soil properties have to be considered

We will specify that the soil properties refer to the soil liquid water content (LWC) and temperature.

Line 17: change infrastructure into infrastructures

We will keep the word infrastructure (according to Merriam Webster: https://www.merriam-webster.com/dictionary/infrastructure).

Line 29: I would add layer after liquid water

We will implement this change.

Line 51: I would specify at what soil depth grid sensors measured the soil temperature and LWC across the slope

We will implement this change.

Caption in Figure 2: Please explain the meaning of the different colours in the graph

We will add the colors to the caption.

Line 75: How the slope is protected? Because of the lower slope angle? Because of some active protections?

The slope is protected from glide-snow avalanches due to the local topography consisting of a small hill above the slope. This protects the reference site from the larger avalanche prone-slopes at higher elevations. We will explain this in the revised manuscript.

Line 76: May you provide some more information about the soil? What is the soil classification? Moreover I think that not only the texture but also the soil organic matter content could influence the water retention.

The soil was classified as a sandy loam and soil organic matter content was not measured. The water retention of the soil in the Seewer Berg slope and its potential connection to the capillary suction of water from the soil into snow was investigated in detail in Lombardo et al. (2025) (accepted for publication). In Lombardo et al. (2025) we also provide a data repository (Envidat) including the details of the soil profile. We will refer to Lombardo et al. (2025) and the data repository in the revised manuscript.

Line 308: I think that in Ceaglio et al. 2017 the potential contribution of groundwater in the study area could have been higher than in your study site, saturating the soil with a potential higher movement of water from soil to the lowermost layer of the snowpack.

Thank you for pointing this out, we will mention the groundwater source in Ceaglio et al. (2017).

Line 337: I fully agree that soil inhomogeneities and preferential flow patterns could explain the spatial variability of the local temperature/soil LWC. I would add also the plant cover inhomogeneities which could change the surface roughness.

We will mention the plant cover inhomogeneities as a potential contribution.

Line 389: correct avalanches

We will correct this typo.

References:
Lombardo, M., Fees, A., Udke, A., Meusburger, K., van Herwijnen, A., Schweizer, J., and Lehmann, P.: Capillary suction across the soil-snow interface as a mechanism for the formation of wet basal layers under gliding snowpacks, Journal of Glaciology, accepted for publication, 2025