

Minor remarks

p. 1

l. 25 topographical attributes and characteristics of the contributing area

It is difficult to understand what these terms mean.

l. 27 to l. 2 (p. 2)

The sentences connecting with “Therefore” refer to different topics, thus the connection seems to be logically wrong.

p. 2

ll. 10-12

It would be better to revise the sentence, because the content of iii) is not equivalent to those of i) and ii). In general, iii) is firstly interpreted, then i) and ii) are discussed.

p. 3

It would be better to add a comment whether direct observation of the borehole core is available or not. If available, it would be much better to discuss the composition of the rock glaciers with the core stratigraphy

l. 14 2D SRT

This is incorrect. They only did conventional refraction survey.

ll. 21-31

Readers cannot check the topography mentioned in this part, because the photo and map in Fig. 1 are too small. Add a geomorphological map indicating not only the survey lines but also the lateral moraine, ice patches, rooting zone, ridges/furrows and LIA glacier extent.

p. 7

l. 13 first slice

Which is the first slice in the figure?

l. 25 the centre of the rockglacier

It may confuse readers, because the center of the rock glacier does not corresponds to the center of Fig. 4 but the lower edge.

p. 8

l. 21 reaches a depth of 7 m

Is it correct? Fig. 5 indicates that the deeper part (11-13 m) also has similar resistivity.

ll. 22-23 The layer above this structure is highly variable in thickness and ranges from 4 m in the upslope part of the model over 1 m in the middle part to 5 m in the downslope part of the model.

It is impossible to understand where “this structure” is, because the relatively high resistivity structure (>6 kohmm) indicated as (2) is covered with a thin low resistivity layer only seen in

the slice of 0.5-1 m.

l. 32 to l. 1 (p. 9)

Readers cannot confirm the relation between surface topography and resistivity from Figs. 5 and 6. Add a hillshade image with contour lines of the survey area.

p. 10

ll. 29-30 This is caused by the lower pore space volume and hence the lower ground ice volume

This interpretation is questionable. Reconsider basic permafrost physics that frozen finer soil holds more unfrozen water in it near the melting point.

p. 11

ll. 22-26

I cannot understand what the authors want to say.

p. 12

The paragraph of the section 5.4 is too long. It would be better to revise it into several paragraphs.

ll. 4-6 , where ... 1998)

It would be better to remove this part from this sentence, because the topic is not discussed here but after the glacier-permafrost interaction.