

Interactive comment on “Maskevarri Ráhppát in Finnmark, North Norway – is it an earthquake induced landform complex?” by R. Sutinen et al.

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Received and published: 21 February 2014

Review for Solid Earth Sutinen et al. "Maskevarri Ráhppát in Finnmark, North Norway – is it an earthquake induced landform complex?"

Does the paper address relevant scientific questions within the scope of SE? Yes

Does the paper present novel concepts, ideas, tools, or data? Yes, the concept is new

Are substantial conclusions reached? Yes

Are the scientific methods and assumptions valid and clearly outlined? Partly (the origin of the landforms should be discussed in more detail)

Are the results sufficient to support the interpretations and conclusions? Yes

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Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? Partly (I have difficulties to understand the part with the electric surveys and the resulting implications because I am not familiar with the method).

Do the authors give proper credit to related work and clearly indicate their own new/original contribution? Yes

Does the title clearly reflect the contents of the paper? Yes

Does the abstract provide a concise and complete summary? Yes

Is the overall presentation well structured and clear? Partly (I would prefer to separate “results” and “discussion”)

Is the language fluent and precise? Yes

Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?

Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? Yes (separate “results” and “discussion”, scale bars are missing at some of the figures)

Are the number and quality of references appropriate? Partly (there should be some more references that stress the importance of post glacial faults, and there should be more literature used to describe the effect of faulting on the land scape and more literature on push moraines)

Is the amount and quality of supplementary material appropriate?

General comments

This is an interesting paper on the effect of post glacial faulting. I have a few general comments and questions that should be addressed during the revision:

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1. It would be good to show cross-sections of the described landforms to better visualize their form and internal structure. Are there sedimentary logs available?
2. Please add more information about the sedimentology of the landforms. Is it possible that they may have formed as a consequence of glacial lake outburst floods?
3. Is it possible that the described landforms are periglacial features such as pingos?, or a combination of subglacial features that were overprinted by periglacial processes? This should be discussed.
4. The formation of push moraines must be discussed in a more extended way. There is new literature available.
5. Are there recent analogues where earthquakes produced landforms similar to the ones described from Finnmark?
6. Please better explain the mechanism how the earthquakes could have formed the landforms in Finnmark. A kind of conceptual model or “cartoon” would be helpful for the reader.
7. Are there soft sediment deformation structures developed in the area (such as clastic dikes, sand blows etc.) that indicate seismic events?

Specific comments:

I think it would be better to separate “results” and “discussion”

Please add a scale for Fig. 2

Please add scales for Fig. 4B, C, D.

Kind regards, Christian Brandes

Interactive comment on Solid Earth Discuss., 6, 321, 2014.

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