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Interactive comment on “Variations of soil profile characteristics due to varying time spans since ice retreat in the inner Nordfjord, western Norway”

by A. Navas et al.

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Received and published: 28 February 2014

6) Regarding the site selection, we selected, based on intensive field pre-investigations and existing knowledge, sites which are representative for the relevant deposits existing in the valleys and which are close to defined and dated moraine ridges. An important criterium for the selection was that the sampling sites were (nearly) horizontal, and that accordingly no relevant delivery of new material is currently affecting these sites. Explanation included in the text.

Specific comments:

Sample treatment included homogenization, quartering and sieving of the samples (2

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mm mesh). The fraction > 2mm that includes stones and rock fragments was weighted and separated from the < 2mm fraction. Standard soil analyses, geochemical and radionuclide analyses are done on the < 2 mm fraction. An explanation is included in the text and data on stone contents are provided in Table 2 and Figure 4.

A reference for the analytical methods of stable elements is included in the text.

The type of relationships between stable elements either direct or inverse suggests common or different origins, respectively, from minerals contained in the parent materials on which soils are developed. High correlation coefficients between elements would indicate similar transport, accumulation and sources (Acosta et al., 2011). The inverse correlations found between Na, K, Pb, and Be with the rest of elements and the direct correlations between them suggest a different mineralogical source to the rest of elements. Evidences of the main control of substrate mineralogy and on the element transfer from rock to soil were also found on variety of substrates and environments (Wang and Chen, 1998; Navas et al., 2002 c). Explanation is provided in the text.

Technical corrections:

- 1) In Conclusions a zero has been added (10000)
- 2) CV has been removed from Tables 2 and 3
- 3) "Glacier" has been removed from legend in Figure 2.
- 4) Most international readers do not know the meaning of the Norwegian words "bree" and "dal". We therefore think that it is better to keep names as they are. We have exactly discussed this issue quite often when we publish on our Norwegian sites. We think that it is better to keep the correct Norwegian names (Jostedalsbree, Erdalen, Bødalen) and still have the explanations (ice cap, valley) in addition to have things understandable for international readers.

New references have been included in the text as requested.

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Please also note the supplement to this comment:

<http://www.solid-earth-discuss.net/6/C60/2014/sed-6-C60-2014-supplement.pdf>

Interactive comment on Solid Earth Discuss., 6, 91, 2014.

SED

6, C60–C64, 2014

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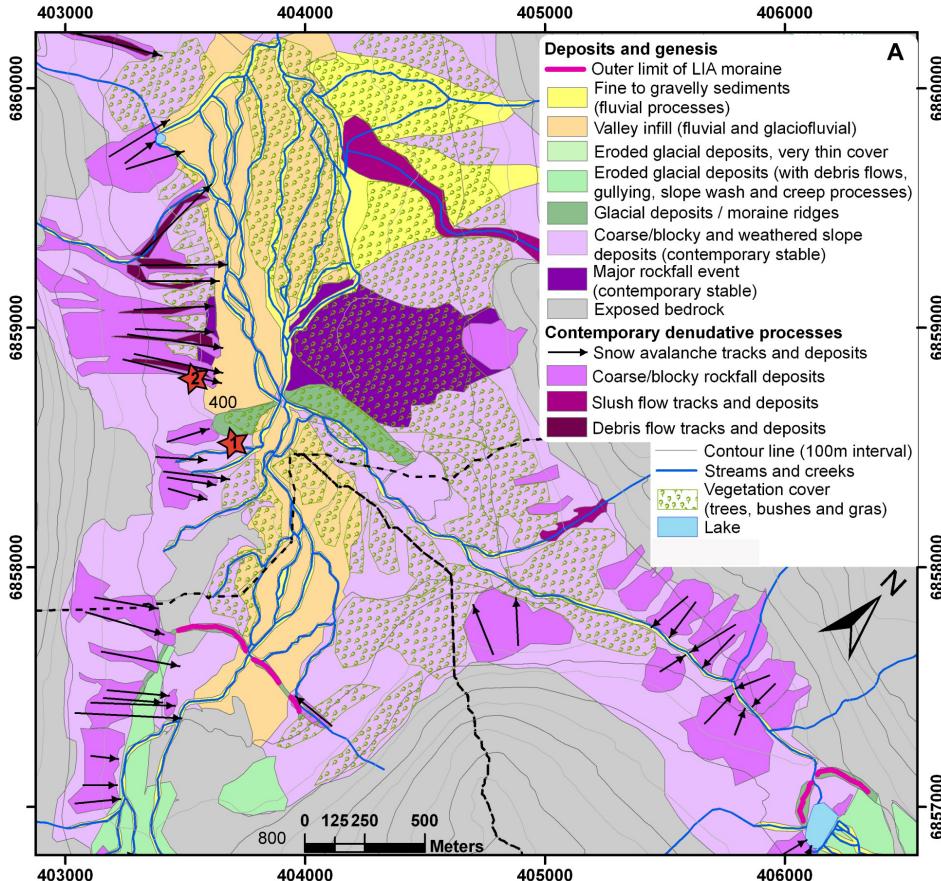
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Fig. 1.

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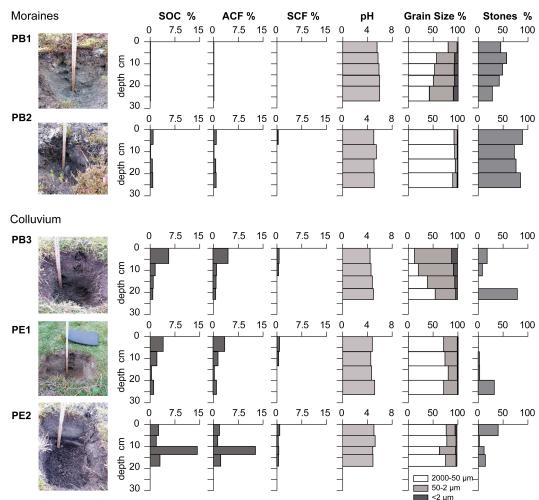


Fig. 2.

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