



## ***Interactive comment on “New zircon data supporting models of short-lived igneous activity at 1.89 Ga in the western Skellefte District, central Fennoscandian Shield” by P. Skyttä et al.***

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Our response to reviewer #2 comments may be found below; the page and line numbers refer to those in the “Discussion Paper” published on the Solid Earth web page.

We shortened the “Geological setting” section by one third of the length (from ~1700 words into ~1150 words) and made the text easier to follow for a non-specialist in the local geology.

The reverse discordia of zircon was considered to be an analytical artifact caused by too close position of the sample puck with respect to the sample holder. For this reason, sample IV was re-analyzed. The new results are of significantly better analytical quality,

C331

and most importantly, do not show reverse discordia of zircon. Consequently, the new results were used instead of the problematic old ones for sample IV. However, the actual age constraint for sample IV remains approximately the same, thus requiring no further changes in the paper content.

The analytical strategy during the SIMS work: The problem in hitting cracks and inclusions was due to the overall bad quality of the zircon material. This was emphasized in the revised manuscript in section 3.1., p. 363/364: “The overall analytical quality of the zircon populations was low, and most crystals contained cracks and inclusions. Areas large enough to host the spot without including these features were hard to find, and therefore several of the analytical spots also hit inclusions and cracks (cf. Description of spot location in Table 1 and representative zircon crystals shown in Fig. 5). A much larger number of analyses were obtained from the samples with a high abundance of cracks and inclusions to match problems with low analytical quality of analysed areas. The problem with low analytical quality of the grains was more accentuated for samples with a low yield of zircon in which the selection of grains was limited, e.g. sample IV, the Kristineberg hanging-wall rhyolite.”

We removed reference to the missing analysis point in Table 1 caption.

We enlarged the key to Fig. 1 and added “Tera-Wasserburg” in Fig. 6 caption.

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Interactive comment on Solid Earth Discuss., 3, 355, 2011.