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Biogeosciences Discussions

Interactive comment on "Combined use of stable isotopes and fallout radionuclides as soil erosion indicators in a forested mountain site, South Korea" *by* K. Meusburger et al.

Anonymous Referee #2

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1. general comments

This study shows the suitability of the methods, that was reported by Schaub and Alewell (2009), confirm reference sites for 137Cs-method using stable carbon and nitrogen isotope, although these are not necessarily suitable for quantitative assessment of soil erosion and sediment deposition by themselves. As authors refer, selection of reference site controls the result of 137Cs-method. Therefore, the fact that these methods can apply for the different environment would contribute to more accurate measurement of erosion/deposition rate of surface soil erosion. So I think this study is worthy of publication in this journal after some modification.

2. specific comments

2.1. In this paper, authors showed that the correlations between nitrogen and carbon content and its corresponding <delta>15N and <delta>13C signatures indicate the disturbance of the site. I think authors should refer whether this indicator could assess the disturbance quantitatively or not.

2.2. P. 2571, Eq. 1; This equation describe the depth distribution of 137Cs in an undisturbed soil. I think the equation for estimation of erosion rate shold be added.

3. technical corrections

3.1. P. 2574, L. 3; "accessed" should be "assessed". 3.2. P. 2571, Eq. 1; "ho" should be "h0" (subscript zero). 3.3. P. 2568, L. 1; "sources and thinks" should be "sources and sinks". 3.4. P.2584, Fig. 1; This elevation map gives us a little information on sampling site. I could not find which is the transect 1.

Interactive comment on Biogeosciences Discuss., 10, 2565, 2013.