

Interactive comment on “Long-term dynamics of buried organic carbon in colluvial soils” by Z. Wang et al.

Anonymous Referee #3

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I thought this was an excellent paper.

This paper deals with the long-term dynamics buried organic carbon into colluvial soils in different depositional environments by comparing the profiles of organic carbon and its quality in different depositional settings with those of a reference of an uneroded reference soil. Dates for the depositional profiles are established by using a combination of caesium 137, phosphorus, optically stimulated luminescence and carbon-14. The paper concludes that 17% of soil organic carbon remains in the long term storage. The paper is the first to demonstrate burial efficiencies over the timescales considered and is therefore significant.

To calculate these efficiencies the paper does rely on a number of assumptions and the interpretation of some times rather noisy phosphorus and caesium profiles. However,

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the authors clearly outline these assumptions, the limitations of their methods and discuss the uncertainties surrounding them openly. This gave me confidence in the conclusions that they reached.

Therefore I would suggest that the paper is accepted with very minor revisions.

Minor revision page 13728 line 15 delete “settlements have accumulated”. Insert ‘of sediment has accumulated’ to after 4.5cm

Interactive comment on Biogeosciences Discuss., 10, 13719, 2013.