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Interactive comment on "Disturbances can control fine-scale pedodiversity in old-growth forest: is the soil evolution theory disturbed as well?" *by* P. Šamonil et al.

Anonymous Referee #3

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This is a major step forward in understanding how small differences in the soil interact with tree species and disturbance regimes to create heterogeneity in soil structure, disturbance regime, and tree community composition over time. I have noticed similar dynamics in my study sites in North America, but have not had time to examine them, and am happy to see this study put forth reasonable hypotheses about how these dynamics work, with considerable support from the field data. In essence, this study starts to build a bridge across the gap between traditional forest disturbance ecology and geomorphology for multi-aged forest temperate types dominated by shade-tolerant species. The authors also point out future avenues of research that are likely to lead to additional advances in understanding how 'ecogeomorphological mosaics' are formed.

The field work and data analyses that went into this study were of the highest quality, and the amount of work that went into the study is huge. The analyses of soil structure and dendrochronology/stand history are much more sophisticated than most previous studies on similar topics. For example, combining the Boundary line method of detecting subtle releases from suppression with traditional moderate and major releases and properly attending to issues like how far back in time the analyses are valid, and how to interrelate different data sets with different temporal resolution. The paper itself if nicely organized and well written, with some missing words or sentences with awkward wording, a few of which I point out below.

P. 5474, line 17. 'to' is missing, '. . .needs to incorporate. . .'. P. 5474. Lines 28-29. Suggested rewording ". . . as far as we know studies connecting disturbance history with current soil diversity are still absent for temperate forests. " P. 5490, line 5. Change proof to prove. P. 5490, line 15, 'quantify' should be changed to 'quantified'. P. 5490, line 28. 'a' is missing, 'a longer period'. P. 5490-5491. Sentence lacks 'the'. ". . .the upper mineral horizon. . . the footprint. . ."

Interactive comment on Biogeosciences Discuss., 11, 5471, 2014.