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Interactive comment on “Assessing the performance of a plastic optical fiber turbidity sensor for measuring post-fire erosion from plot to catchment scale” by J. J. Keizer et al.

Anonymous Referee #2

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This paper studies the impact of fire on soil erosion processes, focusing on sediment concentrations in runoff flow and streamflow samples at different scales, considering different erosion control treatments. Results are relevant and the objective falls within the scope of SOIL. The paper introduces the use of a novel device, a plastic optical fiber turbidity sensor, which is a new innovative tool for the study of sediment transport between soil and water bodies. Although turbidity sensors have long been used, the technique proposed in this study makes the experimental design more simple and the study much more relevant in a broad context. In my opinion, the study addresses soil problem within a multidisciplinary context and this is beneficial for SOIL, not only

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because of the introduction of new methodologies, but the study of soil processes in connection with other compartments of the ecosystem. Although objectives are clearly exposed (page 452, lines 3-15), I have some concerns. My ask is: do authors want to test a new (interesting) tool so that they design an experiment or do authors want to study a problem using a new innovative tool? From the text, it looks the first option, but should be the second one. This problem affects the abstract partially and the title, which I strongly encourage to change. The experimental design and scientific methods are valid, although I miss some more details. In general, section 3 needs a subsection titled “Experimental design”. Some sentences are not acceptable (see page 454, lines 11-13) and need a more detailed description (see detailed comments). In general, section 3 is wordy and some parts difficult to understand. Authors have chosen to combine “results” and “discussion” in one section. This is not my favorite option, but I find that the final result is very good in some cases, not so in others. I mean: only three references in section 4.1.2; only two in 4.2.1; only one in 4.2.2; only one in 4.3. So, discussion, in my opinion, needs more support and a deeper review of previous literature. Conclusions are correctly enounced, although I suggest grouping them in a paragraph, not All figures and tables are useful and necessary, although I have observed some formal deficiencies. Most of them concerning the use of capital letters, abbreviations (eg, “om” instead of “OM”) and their meaning (organic matter, not defined in the caption nor in the main text).

Please also note the supplement to this comment:

<http://www.soil-discuss.net/2/C247/2015/soild-2-C247-2015-supplement.pdf>

Interactive comment on SOIL Discuss., 2, 449, 2015.

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