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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 #1

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General comments This study presents original data on field testing of a novel plastic optical fiber (POF) turbidity sensor which can be used to determine the load of suspended material in samples of runoff and overland flow after wildfire. The authors had previously developed the POF sensor (Birlo et al. 2010 and Birlo et al. 2011) and this work has been aimed to evaluate the performance of such sensor in burned areas. This point is critical for the applicability of that device. As a whole, I think the authors have made a valuable effort to improve the methods for determining the suspended material in aqueous samples. So far, this required laboratorial work, consuming time, and it was not easy to obtain a continuous in-situ record of the sediments. Thus calibration

of the developed POF sensor with many different samples collected in burned sites provides interesting information for the future use of the sensor in similar studies. The manuscript is well structured. Objectives are clearly presented. Material and methods are correct, and the results and discussion section is adequate. I think after minor changes suggested below, it must be accepted for publication. Specific comments.

2 Study area and sites section . Since the authors collected samples in a variety of situations, a table summarizing the number, size, substrate, cover, treatment or not and type (unbounded or bounded) of plots would be welcome. 3.2 Laboratory analysis of runoff samples Line 10. Please clarify here the meaning of “normalized”. 4 Results and discussion Maybe the authors can simplify the first paragraphs of the subsections 4.1.1, 4.1.2, and 4.2.1 and 4.2.2, simply with a comparison of the respective populations by a non parametric test. This would also reinforce the statements they do, when comparing in fact the respective medians. Maybe part of the variability detected could be a consequence of different levels of fire severity and could be convenient to mention it in the discussion.

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