

Interactive comment on “Soil erosion and sediment delivery in a mountain catchment under land use change: using point fallout ^{137}Cs for calibrating a spatially distributed numerical model” by L. C. Alatorre et al.

Anonymous Referee #3

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The manuscript represents a good contribution to the study of the role of land use change on sediment delivery using spatially distributed erosion models. It is well written and the methodological process is clearly explained. The results are discussed in an appropriate way. In summary, I believe that work can be published in HESS. However, the authors should consider the following suggestions and comments:

1) It would be appropriate to modify the title of the article. I think that the ^{137}Cs is the method to calibrate WATEM/SEDEM and not the object of the work. Therefore, a more

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accurate title might be: “Soil erosion and sediment delivery in a mountain catchment under scenarios of land use change using a spatially distributed numerical model”.

- 2) Page 11134, line 9. “Its study” ... Does this refer to the qualitative studies?
- 3) Page 11139, line 12. Navas et al. (1995) are not included in the references.
- 4) Page 11139, line 22. It is not necessary to add: “(left side)”.
- 5) Page 11139, line 27. It is not necessary to add: “(right side)”. It is confusing.
- 6) Page 11141, line 4. Lana-Reanult et al. . . is Lana-Renault.
- 7) Page 11141, line 4. Lana Renault and Regüés is Lana-Renault and Regüés.
- 8) Page 11141, line 7 to 11. Reference to Figure 2 should be included in this paragraph.
- 9) Page 11141, line 12. Although the number of ^{137}Cs samples (19) may seem insufficient for the calibration, the data of seven years of sediment yield, recorded at the catchment outlet, help to strengthen the validity of the model results and the calibration of ktc using ^{137}Cs .
- 10) Page 11141. A table with the main characteristics of the instrumentation of Arnas catchment should be included in the manuscript.
- 11) Page 11144, line 21. The number 925 is 926 according to table 4.
- 12) Page 11144. It would be useful to explain more clearly the paragraph 19 ... 22.
- 13) Page 11146, line 3. Fig. 7a is Fig. 8a.
- 14) Page 11146, line 12. Fig. 7a is Fig. 8a.
- 15) Page 11150 1150 and subsequent. The references are not ordered by year of publication.
- 16) Page 11151. Box, J.R. . . . is not cited in the text.

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- 17) Page 11151. Buurman. . . . are not cited in the text.
- 18) Page 11153. García-Ruiz, J.M., Arnáez, J.... are not cited in the text.
- 19) Page 11153. Lana-Renault, N., Regüés. . . 2006 are not cited in the text.
- 20) Page 11154. Planchon are not cited in the text.
- 21) Page 11155. Seeger. . . . are not cited in the text.
- 22) Page 11156. Verstraeten. . . . 2001 are not cited in the text.
- 23) Page 11a56. Verstraeten. . . 2008 are not cited in the text.
- 24) I think the number of references is too high and repetitive.
- 25) Table 1. Replace “right side” by “northeast-facing slope (forest)” and “left side” by “southwest-facing slopes (shrub).
- 26) Table 2 is not cited in the text.
- 27) Table 3. Location of the 137Cs inventories is shown in Fig.1d

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