

P. 3, l. 18: No necessary two citations (one is enough in my opinion)

*We will remove the first citation.*

P. 3, l. 20: I agree with the complains about the use of the USLE, but this was not the mistake of Wischmeier and Smith, it was because an abuse and misuse of the methodology. I suggest to show some examples of this see here some recent examples that can support your rationale. Suggestions: Galdino et al. 2016, Erol et al. 2015, Ligonja and Shrestha 2015

*It was not our intention to criticise Wischmeier and Smith. We will include the given examples.*

P. 3, l.21-28: I suggest to move this to the method's section

*We will follow the suggestion.*

P. 10, l. 15: In my opinion the e.g. abbreviation is overused along the paper and can be removed as does not add any relevant information.

*We will remove the e.g. at all non-relevant positions.*

P. 10, l. 22: I suggest to use Mg as abbreviation. It is more and more used and makes easier the reading.

*We will move to Mg*

P. 10, l. 29: This is a key issue to understand the soil erosion processes and this is called connectivity by the scientific community. I think your discussion section can be enriched with a couple of paragraph discussing the importance of the connectivity of flows and sediments see here some papers that can help there is more literature about this that can make your paper attractive for a large community of scientists working on this issue. Recommended background literature: *López-Vicente et al. 2015, Masselink et al. 2016, Marchamalo et al. 2016*

*Thank you, we will introduce the connectivity to the discussion.*

*Section 3.2 “This large contribution of rill erosion for sediment delivery was also observed by Wang et al. 2010 in the Kinderveld and Ganspoel catchment. In a modelling study, Wilken et al. (2016) tested the effect of different rill initiation characteristics on carbon delivery in a catchment of similar loess derived soils. The results showed that rill erosion widely controls sediment and carbon delivery in catchments with high connectivity.”*

*Section 3.3 “Possible explanations for this discrepancy are (i) that aggregate breakdown during transport is an important process which is not represented by the model, or (ii) that concentrated erosion also results in selective detachment of sediments. (iii) However, the most likely explanation are connectivity differences between the field scale study area and the landscape scale catchments studied by Wang et al., 2010.”*

*Section 3.4 “This is explained by the fact that sediment delivery is not linearly related to runoff amount: once the hydraulic threshold is exceeded (i.e. an extensive network for concentrated flow is established) the sedimentological connectivity is highly enhanced and SDRs can be very large. The simulation of hydrological and sedimentological connectivity requires the introduction of (i)*

*differentiated hydrological behaviours for sheet and concentrated flow, (ii) rill/ephemeral gully network development tracking and (iii) the rill/ephemeral gully network connectivity to the outlet of the catchment. Our simulations show that the highest export rates occurred when the rill/ephemeral gully network was already well established at the beginning of an event. The important role of a rill/ephemeral gully network for the catchment connectivity was also pointed out in other studies (López-Vincente et al., 2013, 2015). However, structures which interrupt the rill/ephemeral gully network potentially reduce the sedimentological connectivity to the outlet and reduce the SDR substantially (Wilken et al., 2016)."*

P. 11, l. 3-13: This last paragraph discusses the findings within the European loess belt results but probably it will be of interest to mention also the loess plateau in China, where a different environmental (biophysical and land use and management) are different. This two recent papers can help in the discussion here or in future research of the authors. Recommended literature: Zhao et al. 2016, Tian et al. 2016.

*We agree that there might be some analogies to the Chinese Loess Plateau. However, as the referee already mentioned, there are also large differences between the European Loess Belt and the Chinese Loess Plateau (e.g. slopes, land management, climate). So we prefer not to overemphasize the analogy.*

P. 11, l. 26: Already mentioned before.

*This is a mistake. We will remove the redundancy.*

General comment on figures: I suggest to use color in the figures, readers welcome color.

*We will highlight important parts of the Figures in red color.*

Figure 6: The graphs with colored lines will be easy to read.

*Yes, we will highlight SOC delivery in red color, which should help the reader.*