

The paper entitled “EFFECT OF HYDRAULIC PARAMETERS ON SEDIMENT TRANSPORT CAPACITY IN OVERLAND FLOW OVER ERODIBLE BEDS” by M. Ali et al., represents an interesting work about sediment transport under different hydraulic conditions in an erodible bed. It summarizes the results of the experiments carried out in a flume to predict sediment transport capacity. Different hydraulic but important hydraulic parameters are studied to evaluate which influences the most to the transport capacity, deriving an empirical transport capacity equation. The paper is adequate to be published in HESS, but it needs a deep improvement for this. For this reason, I am just going to give general comments to be considered by the authors and, if they decide to consider these comments, I will be willing to review the new manuscript after resubmission if the editor considers it necessary.

Regarding to the introduction, I think that writing a good state of the art is basic for a paper of this kind but it seems that the present word should go further than listing which publications refer to a similar topic. Please, consider extending the introduction explaining why the variables to have chosen to study are really important (and they are).

Regarding to material and methods, you talk about non-cohesive sediments but, what do you consider as non-cohesive? More explanation is required for that issue. Besides that, you do the experiments with sand of 4 different sizes but, why sand? Why these sizes? As previously commented, a more detailed explanation is necessary. On the other hand, is completely necessary to evaluate the sediment budget of a flume by using a laser scan? I think that taking samples is more than enough to make a simple estimation of erosion and deposition in a 3-m flume, moreover if the objective of that budget is just to evaluate if flume length is adequate.

The experiments and the results and described in a detailed way but, as in the case of the introduction, the discussion is just based in comparison of your results with the obtained by other similar studies done by the authors or people from their institutions; I guess that discussion should be deeper than a summary of results. Please rework that part of the paper.

Finally, you develop a general empirical equation of transport capacity from the results obtained by your experiments but, before publishing it I think that it has to be validated in other conditions; you are just working with one kind of sediment (sand), of 4 concrete sizes (not the whole distribution), with determinate slopes and discharges (quite low by the way). You should validate this equation for other kind of sediments or, in case you do not do that, you have to specify in which conditions (sediment, discharge-range, slope-range, etc) the equation can be used.

As explained before, once previous comments have been considered and the paper has been resubmitted, I will provide specific and technical comments about the redaction of the paper.