

## ***Interactive comment on “Laboratory tests for the optimization of mesh size for flexible debris-flow barriers” by C. Wendeler and A. Volkwein***

**Anonymous Referee #2**

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The manuscript of Wendeler and Volkwein describes experiments investigating the filling process of flexible net barriers for debris flows. The data is new and will be of interest for the community. The manuscript is well written in terms of English style and grammar, but lacks structure and needs clarification concerning some important issues. This might include some significant re-writing and I therefore recommend moderate to major revision.

General comments: I recommend to revise the abstract in a way, that it is a stand-alone summary of the paper (what is the paper about? – what’s the question? – how was it answered? – what’s the result? – what are the implications?). The Introduction is unclear. It starts with a description of general advantages of net barriers, then some lines of referencing to earlier publications, then an unclear description of the tests and the

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background of the project and how the material was delivered to the lab. I strongly recommend to rewrite/restructure the Introduction, so that the reader can understand what is already known and what is the problem (research question). Detailed information of the tested material should be given in the methods section, not in the introduction. I think the differentiation between subsection 4.1 and 4.2 is unnecessary, because the velocity scaling based on Froude is already given in 4.1. I recommend that the authors should also justify why they think Froude scaling is sufficient for their special case of modeling the impact into a net barrier (see arguments given by Iverson 2015). Results section: in the introduction section the authors mention more than 40 tests but only show results of 6 tests. Why?

Specific comments: Page 2100, line 15: i would delete “still” Figure 3: it would be useful to add the location of the measurement sensors in the sketch Page 2104, line 19-: I would use the term “geometrical length scale” Page 2102-2103, section 3.1: Information on the tested material should be given in the methods section and not in the results section. Figures 7&8 are unclear, the text should not overlap with the graph, and the labeling should be clear. Page 2104, Section 3.3: the term velocity profile is misleading as it mostly refers to the vertical velocity distribution within a flowing material.

Ref: Iverson, R. M. (2015). Scaling and design of landslide and debris-flow experiments. Geomorphology.

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