



Interactive  
Comment

## ***Interactive comment on “Damage costs due to bedload transport processes in Switzerland” by A. Badoux et al.***

### **Anonymous Referee #1**

Received and published: 9 October 2013

#### General comments

The presented paper stresses the importance of sediment transporting processes. Especially bedload transport causes huge damage costs in Switzerland. In total 35 % of the reported damage can be attributed to bedload transport. The influence of single extreme events on the total damage and the proportion of bedload transport related damage is shown. Analysis of the spatial distribution of the damage costs lead to broader conclusions and show that steeper, higher areas are more affected by damages due to bedload transport. The results are of high relevance to stress the importance of bedload transport research at steeper channel gradients.

#### Specific comments

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a) Newspaper often mix up the terms bedload transport and debris flow. Therefore the key words would be very interesting.

b) How do you distinguish between fluvial bedload transport and debris flow?

c) How did you decide whether bedload transport played a major role?

d) Maybe characteristic numbers (e.g. Melton ratio) could help to distinguish between the processes? e) How was the mean channel slope calculated? Mean values higher than 25 % indicate very steep (sub)-catchments. These sub-catchments could transport the sediment as debris-flow. They indicate the relief energy required to deliver sediment to the streams. The local (mean over a certain length) channel gradient at the location of the damage would be interesting for further analysis.

Technical corrections

Table 1. The % values (numbers of municipalities affected) are given as proportion (e.g. 0.26 instead of 26%).

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 4181, 2013.

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