

## ***Interactive comment on “Debris flows recorded in the Moscardo catchment (Italian Alps) between 1990 and 2019” by Lorenzo Marchi et al.***

**Anonymous Referee #2**

Received and published: 16 October 2020

Informative description of the monitoring situation of the Moscardo torrent.

Comments: It would be fine to get some background information about the instrumentation before chapter 3 (debris flow data). The main recordings are along the channel are flow height and seismic amplitude. How these data are observed, recorded and treated? Within the sampling interval (measuring interval?) is the record averaged, or is it the maximum etc.? How to start and end a debris flow surge with a Zero value in order to calculate a discharge? How to define the real flow section of a debris flow, if there is only a punctual measurement? How big are possible uncertainties within the dataset? Are there any suggestions?

Line 83... (surge) velocity, mean velocity (see table 2): How is mean velocity calculated, which difference is calculated to (surge) velocity? How is the peak discharge really

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estimated?

Ch 4 (Line 100) ...beginning of summer (2019) to early autumn (1991). What does this mean? Are the triggering rainstorms independent from the gauging station?

Fig. 4 Legend is missing Are the data shown for all stations? What does 150 and 275 present? Give the information about the day.

Fig. 5: There is no significant regression! Why to present a regression? It is better to show the scattered data.

L135 ...evacuation of sediment.. better: mobilization of sediment

Ch 4.2: For the reader it would be better to combine this Chapter with Ch 4.1 (Occurrence). Well, Ch 4.1 shows the distribution of df occurrence during the year and Ch 4.2 is focused on the precipitation thresholds, but there should be a link between the chapters to come out with some new findings. How is the duration of triggering rainfall defined? Is it the time before the debris flow arrives at the station or less?

Table 1: Just a question: How do we define a catchment (area)? It seems that this area is calculated as the area of the drainage basin (which is hydrological defined). Usually a catchment area includes the area of the fan, too. (see Fig.1) How is mean basin slope and mean channel slope calculated?

Table 2: mean velocity ????? (see above)

Fig. 6: Please include the years of missing data in a different way, not only showing a Zero-value.

Fig. 7: Legend is missing

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2020-276>, 2020.

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