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## ***Interactive comment on “Brief Communication: A new testing field for debris flow warning systems and algorithms” by M. Arattano et al.***

### **Anonymous Referee #2**

Received and published: 23 March 2015

This manuscript deals with a debris flow testing field employing an array of sensors to cast early warnings. In general the topic is interesting, especially the focus on public awareness. However the description of the algorithms and the sensors needs more details. The paper has a great number of self-citations. Although I acknowledge the contribute of the authors in this field I strongly encourage the authors to reduce this number and to add external references. The abstract is not sufficiently informative. From here it is not clear what kind of “installation” you realized; is it an informative installation? Is it an EWS? What parameters does it measure? What kind of information is delivered by the didactic video? In the last sentence of the abstract it seems like this video was only possible after that a debris flow occurred. Here is a list of specific comments: Abstract line 8: add “be” before “envisaged” Abstract line 9: replace “in the

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summer of 2014” with “in summer 2014” Page 1718 line 15: there are many examples of landslide EWS, please cite a few. Page 1718 line 19: advance EWSs can also perform predictions based just on displacement data (see for example Rose & Hungr, 2007; Intrieri et al. 2012) without considering hydro-meteorological conditions, unless your only refer to debris flow EWSs, in which case please be more precise. Otherwise, if you want to be more general about EWSs, remove the reference to debris flows from line 21. Page 1719 line 8: what are these specific devices that permit to detect the arrival in advance? How much in advance? Why do you not consider EWSs with such devices as advance EWSs? Page 1719 line 11: remove the comma. Page 1720 paragraph 2: you often make reference to algorithms but your description is always very generic. Please explain more in detail how these algorithms work. Page 1720 line 26-27: websites are better cited in the reference list together with the date of the last access, while in the main text you can just write Siapmicros, 2015 or Sedalp, 2015. Page 1721 line 1: what kind of sensors? Please be more specific. Page 1721 line 19: substitute allows with permits. Page 1721 line 25: add “to assess” before “the performance”. Page 1721 line 27: pleas add some reference of studies dealing with the importance of involving public education. Page 1722 line 3: substitute “with” with “within”. Page 1722 line 9-11: please revise the English of this sentence “from “by” to “performances”. Page 1723 line 1: how this algorithm is different from what described in Arattano et al., 2014? Page 1723 line 16-17: please explain what caused the false alarms. Page 1724 line 2: replace “allows” with “permits”. Page 1725 line 6: add a full stop after “2015”. Figure 1: it is not clear what a stage sensor is. Furthermore flashing light (named in the text) should be added in the figure. Figure 2 caption: please substitute the comma with a full stop before “the arrow”. Please describe in the caption what we see in fig. 3b and c (the description furnished is very generic). Figure 3 caption: please re-organize the text as follows: “Frames from the video camera part of the EWS testing field (Fig. 2a) showing the debris flow occurred on 15 July 2014 in the Gatria creek. Time in the upper-left corner of each frame is in UTC+1 (local time). The closure algorithm correctly turned off the flashing light at the end of the process:

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(a) the creek before the process (flashing light off); (b) arrival of the main front (flashing light on, as pointed out by the white arrow); (c) a secondary surge (flashing light still on); (d) the end of the process (flashing light off).”

Best regards.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 1717, 2015.

**NHESSD**

3, C282–C284, 2015

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