Natural Hazards
and Earth System
Sciences

Open Access

EGU

Discussions

Interactive comment on "Big data managing in a landslide Early Warning System: experience from a ground-based interferometric radar application" *by* Emanuele Intrieri et al.

Emanuele Intrieri et al.

emanuele.intrieri@unifi.it

Answers to Anonymous Referee #1 General comments The paper presents a procedure for the integration of GB-InSAR data within an early warning integrated system for risk prevention for a critical infrastructure (A16 highways connecting Naples to Bari in southern Italy). The use of GBInSAR for landslide monitoring is not new in the scientific literature, although not yet standardized, so its use in EWS is certainly of interest to the community of landslide researchers. The used language is correct and readable. However, some changes are suggested before publication on NHESS journal. The weak point is that the current version of the paper appears as a "technical note" rather than

an original research article. Indeed, the Authors provide plenty of details concerning the LEWIS system (that is not central in the work) and both the installation and set-up of GB-InSAR tool but, on the other hand, the interpretation of the results and the adoption of thresholds for early warning purposes based on GB-InSAR data is not given the same room and relevance. So, given the timely topic addressed and the potential of these kind of applications, Authors are invited to better balance different parts of the paper to improve the overall quality and readability of the work for the typical audience of NHESS. Some suggestion are provided hereafter. The paper will be submitted as technical note, as suggested by the reviewer. The paper has been balanced following the suggestions furnished in the following comments of the reviewer. In particular, we have better explained the method used here to set thresholds but, since the setting of thresholds is not the objective of the paper, we have also explained that the system is open and different methods can be implemented as well. Furthermore, the part concerning LEWIS has been reduced and a figure removed, in order to better balance the topic of the paper.

Specific comments Lines 55 to 83 provide too many details anticipating the technical descriptions that are expected instead in section 3 or 5. Please remove from here. This paragraph has been in part moved in paragraph 5 and in large part deleted since it mainly anticipated concepts more deeply described in paragraph 5. In section 3.1 the description of LEWIS should be reduced since the Authors already refer to the published work of Costanzo et al. (2016). The section containing information about LEWIS (3.2) has been reduced as suggested and in particular a figure has been removed (Fig. 2). Only the parts that are important to allow the reader to easily understand the following sections have been kept. In section 6, please better clarify how GB-InSAR data interpretation and analysis contribute to fix thresholds for early warning.

Technical corrections: - In the abstract do not use future tense (line 29) – Done Lines 76, 78: change "where" in "were". This part has been removed. - Figure 1: change the shaded fonts because they are not readable The font has been changed and the

shaded box now have a solid colour. - Figure 2: increase the font size. This figure has been removed. - Lines 251, 252: use the past tense. Done. - Line 327: add references to: - Cascini et al., 2010 (for first maps of DInSAR data projected along the steepest slope direction). Cascini L., Fornaro G., Peduto D. (2010). Advanced low- and full-resolution DInSAR map generation for slowmoving landslide analysis at different scales. Engineering Geology, 112 (1-4), 29-42, doi:10.1016/j.enggeo.2010.01.003.; and to Cascini, L., Peduto, D., Pisciotta, G., Arena, L., Ferlisi, S., and Fornaro, G. (2013): The combination of DInSAR and facility damage data for the updating of slow-moving landslide inventory maps at medium scale, Nat. Hazards Earth Syst. Sci., 13, 1527-1549, doi:10.5194/nhess-13-1527-2013, for the map of projectable DInSAR data. The references to Cascini et al. have been added. - Line 412: please clarify better to which "friction" you are referring. We were referring to the friction between vehicles and the tar. Now it is specified in the text. âĂČ

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2017-178/nhess-2017-178-AC1-supplement.pdf

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2017-178, 2017.