

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.

Anonymous Referee #1

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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 GB-InSAR 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

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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 NHES. Some suggestions are provided hereafter.

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. 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). 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) - Lines 76, 78: change “where” in “were”. - Figure 1: change the shaded fonts because they are not readable - Figure 2: increase the font size. - Lines 251, 252: use the past tense. - 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 slow-moving 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. - Line 412: please clarify better to which “friction” you are referring.

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