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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Emergency management of the 2010 Mt. Rotolon landslide by means of a local scale GB-InSAR monitoring system" *by* William Frodella et al.

Anonymous Referee #1

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General comments:

The paper entitled "Emergency management of the 2010 Mt. Rotolon landslide by means of a local scale GB-InSAR monitoring system" deals with use of at local scale monitoring system based on Ground Based Interferometric Synthetic Aperture Radar (GB-InSAR) to assess a slope deformation pattern evolution in correspondence of a debris flow detachment sector, with the final aim to monitoring, mapping and evaluate the residual risk and manage the emergency phase. The title and content of the paper are according to the scope of the journal and generally the whole structure of the work is a well-written, highlighting a very interesting use of the innovative GB-InSAR monitor-

ing technique that, integrated with in situ field survey and investigations, provide useful information in order to better understand the "slow or very slow-landslides phenomena" as the Deep Seated Gravitational Slope Deformation (DSGSD) exanimate in this case study as well as in decision making processes and emergency management activities. For my opinion, the paper should be considered for publication after a minor revision (following the Specific comments provided below) which could give an improvement to the work.

Specific comments:

In order to improve the manuscript, the following points should be considered by the authors while revising the paper. In particular:

- in the Introduction section, when the Authors speaking about the use of innovative technologies for the characterization and monitoring of landslide-affected areas (see from line 32 to line 38), including remote sensing techniques and radar inteferometry (both terrestrial and satellite), in according to scientific literature, the authors should include some other references such as: Gullà et al., 2017; Peduto et al., 2017a; Tofani et al., 2014.

- in the section 3, at the line 131, the Authors speak in general about of a millimeter accuracy of the acquired data by GB-InSAR. Give more detail about the real accuracy (range values). A comparison with conventional ground monitoring techniques, was carried out? What are the differences on the accuracy also compared with the InSAR data provided by satellite sensors? It might be useful to provide a comparison whit the values included in the works of Nicodemo et al., 2016; Peduto 2017b; Casu et al., 2006) about the accuracy on the average velocities or displacements data derived by satellite radar sensors processed by InSAR or DInSAR techniques.

- in the section 5 as well as in the figures 7,9 and 10, the Authors refer to incremental cumulative displacement (ICD) or monthly cumulated displacement (MCD) evaluated along the LOS direction. Why not along the real movement direction? Could be per-

formed a data projection? Please, provide further details about this.

- for a better understanding, an improvement of the Figures 3 and 11 is necessary. In particular, a visible legend should be provided.

References:

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