Anonymous Referee #2

Based on my reviewing, I think this manuscript at least needs some revisions before being accepted for publishing.

Thank for the effort and the suggestions provided to improve our work.

The improvements should be addressed as following:

1) In the methodology part, after introduction of the 3 models (BEM, IEM and NEM), an index or a combination of several indexes which will be used for judging the landslide occurring or not should be clearly pointed out in the text, then readers can find these criterions in the following result part and related figures, and have a better understanding the improvement of the BEM, IEM models.

As suggested, in the methodology part, we will explain how (and why) the threshold in terms of suction has been established for judging the landslide occurrence. In this perspective, the approach followed in the work is based on attempts to detect the suction levels throughout the slope at which a state predisposing to propagation of a local trigger propagation takes place. In other words, the philosophy of the approach is that not of dealing with a particular trigger determining the landslide but, rather, of retrieving dynamics regulating generalized suction drop and then a slope state prone to propagate a local instability. The suction level at which a predisposing state to landslide takes place depends obviously on strength parameters other than apparent cohesion relating to suction.

2) More detail discussions should be provided in the result part, especially for the possible limits of the models. As it is stated in the conclusion part, "The models' performance has been assessed by using them to interpret the case history of a landslide and examine their ability to indicate any hydrological peculiarity at the time of the landslide", then arising a question: does the threshold approach in this manuscript is a universal criterion or just feasible in the study area with the soil combination shown in Figure 2? More explaining about the models limitation will make the conclusion more convincing.

The study is intended to provide a frame and interpretation tools suitable for all the slopes characterized by similar geomorphological features (area labelled as "Fd" in Picarelli et al.,2008 [ISBN: 978-0-415-41196-7]. To this aim, the back-analysis of the 2005 landslide event is consciously avoided but, rather, the case study is used to test the "predictive capabilities" of the approach. Moreover, threshold suction level to attain slope failure conditions could be different when the single/specific slopes cases are considered. Nevertheless, it is worth noting that on 4th March 2005 also on other slopes characterized by similar features in the area, landslide events of minor relevance occurred while no landslide occurred in the remaining period.

3) It would be better if the assessment of slope stability under different models conditions can be provided. How does the suction influence on the slope stability?

The Reviewer's request result quite similar to that formulated by other Anonymous Referee. For these reasons, we report the corresponding answer

The chain of events resulting in a landslide of a silty volcanic covers consists in rainfalls, suction drops and induced strength reductions, locally triggering instability due to an internal or external cause, and then propagation of local trigger throughout the cover. The approach followed in the work is aimed to detect the suction levels throughout the slope at which a state predisposing to slope failure is attained. In other words, the philosophy of the approach is that of not dealing with what particular triggering cause able to determine the landslide but, rather, what generalized suction drop determined a slope state prone to propagate a local instability. The suction level at which a predisposing state to landslide takes place depends obviously on strength parameters other than apparent cohesion relating to suction. These are very difficult to characterize and quantify, due to the presence of mechanical effects exerted by root plants. These effects are major, perhaps more significant than other strength contribution, as, in these soils, vegetation is abundant over the entire year. In order to overcome the problems related to characterize vegetation effects and, consequently, set a deterministic slope stability analysis modelling root effects, the approach followed was that to set the early warning prediction straightforwardly on suction levels (or variables relating to suction, as water storage). Taking into consideration that mechanical root effects should in turn be related to suction levels strengthening soils and roots and progressively disappear with suction reductions.

4) Suction level or value is an important alarm threshold for landslides induced by rainfall, as these words appear many times in the methodology part, result part, but they are missed in the conclusion part. Conclusion part should include the special important thing which obtained from the study.

Such issue will be stressed in the revised version of the paper. Thank you for the suggestion.

5) The units to variables in the equations are missed.

We will introduce in the revised version the units to variables cited in the Manuscript

6) Can Figures 16, 17and 18 be shown in one Figure (e.g. 3 model results are shown in one Figure)? Then the difference of 3 models results can be told obviously as well as the novelty of the BEM, IEM models.

As suggested we have merged Figures 16, 17 and 18 in a single Figure

7) Figure 3, the sub-title of (e) is missed.

We will add the sub-title of (e) for Figure 3