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Interactive comment on "Real-time monitoring and FEMLIP simulation of a rainfall-induced rockslide" *by* Zhaohua Li et al.

Anonymous Referee #1

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The article deals with the problem of landslides (rockslide) based on both monitoring and numerical approaches. The article is composed of two parts. The first part is dedicated to the description of the physical problem, the engineering geological properties and the monitoring results. After a successful prediction for an excavation-induced rockslide in 2011, the monitoring system is proven to be suitable to the rainfall-induced rockslide. The second part of the article deals with numerical analysis (using an advanced numerical method, FEMLIP) of the stability problem. The stability is analyzed using the so called second-order work criterion, and a safety factor from numerical calculation is compared with the monitoring data.

This paper is convincing and valuable in light of very interesting monitoring system and a deep comparison between in situ measurements and the advanced computational

results. I would recommend publication once after the manuscript has been modified according to the comments provided below.

Specific comments and questions:

- Fig. 5b should be explained. Why the CR-forces are different?

- p.7, l.1: The author said that "…have proposed several successful predictions for rockslides occurred in this zone". All these monitoring data have to be considered as "Big Data", or they can be managed in a usual way without considering an "ad hoc" software to detect some anomalous measurements? In the future, probably some specific Big Data treatments will be necessary.

- How anchors are placed in the rock: inclination, depth, etc. What are the criteria that determine these parameters?

- I did not understand how the triggering point of the warning system is determined. It is very difficult to discriminate the onset of a slow/gradual sliding and a sudden/quick sliding prior to global failure. This point deserves more discussions.

- The authors claim that the measuring system is suitable for rockslides due to different triggering factors (excavation, rainfall, etc.). Is it suitable for other types of material? For example, the soil slopes.

- p.14, l.7 Give some explanations about the numerical infiltration process modeling.