

Earth Syst. Sci. Data Discuss., referee comment RC4  
<https://doi.org/10.5194/essd-2020-324-RC4>, 2021  
© Author(s) 2021. This work is distributed under  
the Creative Commons Attribution 4.0 License.

## Comment on **essd-2020-324**

Anonymous Referee #4

---

Referee comment on "Slope deformation, reservoir variation and meteorological data at the Khoko landslide, Enguri hydroelectric basin (Georgia), during 2016–2019" by Alessandro Tibaldi et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2020-324-RC4>, 2021

---

### GENERAL COMMENTS

The present work represents an interesting case study (first time for the Republic of Georgia) of a monitoring of an important landslide phenomenon facing an artificial water reservoir. Despite its uniqueness, however, the study does not seem to provide methodological or quantitative indications such as those required by such a high IF journal.

Even the interpretations proposed remain generic and not adequately justified by the data collected. At present, the manuscript should be implemented and the data more thoroughly discussed and interpreted.

### SPECIFIC COMMENTS

1) Figure 3 - Observing the aerial image, the perimeter of the landslide does not seem adequately bordered. At the link below, for greater clarity, I have reported a sketch of my hypothesis based on the morphology and some characteristics of the slope

<https://we.tl/t-9TIRiDhnIZ>

In particular, I believe that the area is affected both by a deep phenomenon (related to the gravitational trench - DSGSD?) and by more "superficial" ones coinciding with that bordered in blue and that described by the authors.

The latter, however, would seem to be composed of two distinct movements, with different velocity and (perhaps) type (red and orange in the sketch). This fact would also justify the different phases of activation (probably one consequent to the other).

2) Figure 10 - Based on what has been said, I believe a direct correlation between the oscillations of the lake level and the response to the estesimeters is unlikely, although these oscillations certainly represent a strongly destabilizing element. More likely a direct relationship with rainfall events; the different response time would be related to the differential movements inside the landslide body (red + orange). As is well known in geomorphology, more superficial landslides can be activated after a few days of intense rainfalls, while deeper landslides respond with delay to "seasonal" events. In this regard, the use of inclinometers inside the landslide body would have been useful.