Natural Hazards and Earth System Sciences Discussions

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
https://doi.org/10.5194/nhess-2021-388-RC1, 2022

Comment on nhess-2021-388

Catherine Bertrand (Referee)

Referee comment on "Spatial assessment of probable recharge areas – investigating the hydrogeological controls of an active deep-seated gravitational slope deformation" by Jan Pfeiffer et al., Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2021-388-RC1, 2022

The subject is of major interest in mountainous context where it is often difficult to make a water balance in this kind of environment. There are many reasons for this: difficulties in estimating the recharge area, difficulties in estimating the outflows, because they are frequently masked by quaternary formations or rivers. To make a water balance of an aquifer allows to better manage the water resource, which in mountainous environment is fundamental because these are often the only water resource of small communities.

This paper proposes a methodology for estimating recharge areas in particular environments that are gravity instabilities. In these environments, estimating the search area is a real issue, because it is recognized that water is an aggravating factor in the displacement of these slopes. Any identification of water inflow is therefore essential to be able to set up remediation systems (example of drainage cited by the authors).

The method developed in this study is original and seems to give promising results. Unfortunately, there are many inaccuracies in both form and substance that taint these results.

Please also note the supplement to this comment:
https://nhess.copernicus.org/preprints/nhess-2021-388/nhess-2021-388-RC1-supplement.pdf