



Interactive comment on “Changes in glacial lakes in the Poiqu River Basin in the central Himalayas” by Pengcheng Su et al.

Anonymous Referee #1

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The authors present a study of the state and historical evolution of glacial lakes in the Poiqu River basin in the Himalayas. The subject is interesting to a wider public, mainly due to the speed of the on-going changes that take place at high altitudes in the Himalayas caused by climate warming.

The paper gives a thorough description of changes that take place in the region. There are 20 figures and 13 tables illustrating every aspect of that description. Unfortunately, the paper is rather disappointing. The description of changes that take place in the region, manifested by a decrease of glaciers and an increase of glacial lakes, is too long and too detailed, while a synthesis of the changes is missing. At present, the reader does not learn much new about the processes involved.

It is claimed that those changes depend on local conditions, with snow-melt being predominant source of lake water increase at high altitudes while the melting glaciers are mainly contributing at lower latitudes. The water balance equation (WBE) developed follows simple, standard assumptions. The only data processing is applied to derive annual changes in the lake water volumes based on historical satellite images from the time period (1977-2016) and the available elevation data.

The authors compare the WBE model water volume estimates with observed water volume changes; however the accuracy of the modelled and observed values is not given. Therefore we do not know what is the predictive power of the WBE model. It would be also interesting to learn how the approach described can be generalised to other case studies.

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Discussion paper