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Hydrology and Earth System Sciences
Discussions

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

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Much attentions are paid on the dynamic of glaciers and glacial lakes in the process of recent climate change recently. Though many documents focused on the changes of glacier and glacial lake in Poiqu or Himalayas (including Poiqu basin), this submission outstood by more detailed analysis and gross reasonable water balance calculation. So, this is an original paper on an interesting topic of changes in glacial lakes in the Poiqu River Basin. However, the authors should be asked to correct some deficiencies in the paper prior to publication. In general, (1) the expression pattern of the manuscript is overall a little of bits and pieces. The authors provided many detailed changing stories of glaciers and glacial lakes, but it seems insufficient in generalization, particularly, for tables and figures. (2) I suggested that the authors reconsidered

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Discussion paper

the contents and structures of the manuscript (as it is not usually with the special sections of data, methods in the manuscript), and some of the contents in the section of results should be moved to the section of discussion. (3) The assessments of errors and uncertainties risen from the different data source and data processing should be more expressed in the manuscript. Some minor details comments: (1) Page 2, line 19-21: There is a new publication of about glacial lakes in Himalayas. Also, a few new documents can be referred to give the popular classification of glacial lake. (2) Page 2, line 26: Please provide the reference. (3) Page 3, line 14: Carefully summarized this expression: the retreat of glaciers and the growth of lakes are generally believed to be caused by decreasing rainfall. For it is difficult to draw a conclusion that the rainfall was widely decreasing. (4) Page 3, line 1: Is there any manual vectorization/revision performedïij§ (5) Page 3, Fig.4 and Table 3: Some technical terms, such as the type of glacial lake, are not professional. (6) In table 4, How did you get the position of glacial lake? For example, it is the geometry center position of glacial lake? The types of glacial lake is not consistent with that in the text. (7) I think the contents of Fig.6 and Table 7 repeat to some degree. (8) Page 9, line 8-11: It is belonged to discussion. (9) Page 9, line 21: “Speed” is incorrect expression here. (10) I think Table 8 can be changed into Figure. (11) Some like Fig. 7-10 can be presented by attachments. (12) Page 11, line 19: Data source? (13) Page 11, line 21-22: Data source? (14) Page 14, line 7: The hydraulically connection is not visible. (15) Page 14, line 10-12: It can be deleted. (16) Page 15, line 29: In some cases, the moraine dam which is frozen soil did not have high porosity. (16) Page 17, line 26, 31: Table 9 and 6 are Table 10? (17) Page 17, line 16-18: Also considering the frozen soil? (18) Page 17, line 16-21:Listing them as note in the bottom of Table 11.

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