Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2017-525-SC1, 2017

Hydrology and Earth System Sciences
Discussions

Interactive comment on "Projection of future glacier and runoff change in Himalayan headwater Beas basin by using a coupled glacier and hydrological model" *by* Lu Li et al.

A. Sharma

abhishek09406.nith@gmail.com

Received and published: 14 November 2017

Dear authors,

This is a very useful study that has been conducted for the data-scarce Himalayan Basin. I have gone meticulously through the paper and I have the following queries:

1) Line 24. The study helps to understand the hydrological impacts of climate change in North India and make a contribution to stakeholders and policymakers with respect to the future of water resources in North India. -However, since only one GCM (BCC_CSM 1.1) is used for the study, how accurate would be the predictions to be

Printer-friendly version

Discussion paper

able to be referred by the policymakers? -How is the use of this particular GCM, 'Beijing Climate Center Climate System Model' (BCC_CSM 1.1), justified for use over the Himalayan basin? Please elaborate on this issue.

2) Line 237. Authors should present a figure showing the location of Chhota Shigri glacier in the Beas Basin. Because according to SERB report (Ramanathan, 2011), Chhota Shigri glacier is a part of the Chandra Basin. Chandra basin is a sub-basin of the Chenab river basin according to IndiaWRIS basin maps and the SERB report by Ramanathan (2011).

3) Line 150. Chhota Shigri glacier Area is about 16 Km2 (Ramanathan, 2011), the resolution of the hydrological model GSM-WASMOD is 10*10 Km2.The limitation measured on line 306 also mentions the same thing. However, I feel that the model in the study is too coarse to be able to accurately represent the outflow from the glacier melt. How is such a coarse model justified to be used for representing glacier melt from such small area glaciers and the glacier evolution?

4) Line115. Since the outlet station is Thalout station used for calibration of discharge, I would like to know what is the area of the Beas basin upto Thalout?

Reference: Ramanathan, AL. (2011). Status Report on Chhota Shigri Glacier (Himachal Pradesh), Department of Science and Technology, Ministry of Science and Technology, New Delhi. Himalayan Glaciology Technical Report No.1,pp-88p.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2017-525, 2017.

Printer-friendly version

Discussion paper