

Interactive comment on “Hydrological modeling in glacierized catchments of Central Asia: status and challenges” by Yaning Chen et al.

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Review on the manuscript “Hydrological modeling in glacierized catchments of Central Asia: status and challenges” No. hess-2016-325, written by Chen et al.

This manuscript comprehensively reviews hydrological modelling conducted in glacierized catchments in Central Asia. It is a very interesting synthesis focusing on the current limits, challenges and directions of hydrological modelling. The authors point it out that it is lack of glacier submodel and points directions for future hydrological modelling in those regions. The manuscript reads well. I recommend the manuscript to be accepted by HESS after a moderate to major revision is conducted. Following are my critical suggestions/comments for improving its quality 1. Glacierized catchments in Central Asia should be delineated. I cannot find spatial distribution of each catch-

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ment. 2. Need a table summarising attributes of the major catchments (i.e. Ili River, the Amu Darya, the Syr Darya, Tarim River, etc), including climate, soil, vegetation and glacier ratio, etc. 3. Table 1 should be more explicit. Please separate catchments to hydrological model. This table needs to match the table I recommend in point 2. Reviewers can then easily find catchments where how many hydrological modelling studies have been carried out in literature. 4. Table 1 can be clear by reorganisation. Following is just an example. Catchment study hydrological modelling submodels major conclusions limit 5. Need more discussion on how to improve glacier melt simulation. In section 3.2 Glacier melt, authors point that major challenge for glacier melt simulation includes lack of glacier variation data and lack of glacier mass balance data. It looks that it is a widely existed issues for hydrological modelling in high-elevation and high-latitude regions. The question is how hydrologists can improve glacier melt simulations. I think that author can have more in-depth discussion in Section 4 (i.e. if the observations incorporate into remote sensing observation to improving glacier melt observation; model paramersiation to balance equifinality and submodels; which kind of glacier models should be applied for), which will really benefit this manuscript. 6. Line 270. Semicolon should be after ‘text’.

Look forward to seeing the next version of the manuscript.

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