

This purpose of this manuscript is to quantify the impacts of climate variability and human activity on the decrease of streamflow in the Jinghe River Basin (JRB) based on the streamflow elasticity method and two process-based hydrologic models (TOPMODEL and VIC). The results show that both human activity and climatic differences can have major effects on catchment streamflow, and the estimates of climate variability impacts from the hydrological models are similar to those from the elasticity-based method by analyzing the source of errors and uncertainties which may occur in the different approaches. The manuscript is suitable for publication. I have some comments for the revision.

Two process-based hydrologic models are used in this study. Can you explain why two models are used instead of one? What's the purpose? Just for comparative study?

It is assumed, in the TOPMODEL and VIC simulations, that all the model parameters will not change under climate change only. This assumption should be stated clearly and discussed.

Line 7 on page 5258: “using Eq. (),”

Lines 11-12 on page 5258: “It is a holistic approach that assumes the equilibrium water balance is controlled by water availability and atmospheric demand.” The explanation of Budyko curve at the process level has been also been proposed, e.g., DOI: 10.1002/2014WR016857.

Lines 26-27 on page 5258: “w was set to 2.0 according to the land use and land cover status in the study area.” How? Is w estimated by fitting the data?

Lines 3-6 on page 5259: check the sentence.

Line 19 on page 5260: “Tyson polygon”, correct “Tyson”

Lines 24-25 on page 5260: “The annual mean value of runoff was 43.47 mm from 1960 to 1990, and reduced by 17.39% compared with the multi-year average streamflow.” “multi-year average streamflow” during XXX?

Line 7 on page 5261: change “underground water” to “groundwater”

Line 6 on page 5262: “recharger” to “recharge”

Line 19 on page 5262: change “divided” to “delineated”

Line 6 on page 5263: change “in calibration period,  $R$  value exceeds 0.8.” to “in the calibration period, and  $R$  value exceeds 0.8.”

Line 8 on page 5263: change “The validation NSE and WBE values” to “The NSE and WBE values during the validation period”

Line 2 on page 5274: change “with the finding” to “with other studies”

Line 10 on page 5267: change “model” to “models”

Line 14 on page 5267: change “impact” to “factor”