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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Isolating the impacts of land use and climate change on streamflow" *by* I. Chawla and P. P. Mujumdar

Anonymous Referee #2

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The research topic is relevant for publication in the HESS Journal. It is a well written manuscript but key information are missing at several instances. I recommend a major revision to the manuscript and the paper resubmitted for review.

Specific comments:

Page 2206, lines 23-26: It is not clear how naturalized flows were obtained? Also provide a reference, if available.

Page 2207, lines 6-10: My understanding is that the wind speed data for all the GCMs used in this study are not available, right? If so, then how did you obtain it for all the models?

Page 2207, lines 18-21: Was the bias correction from Wood et al. (2002) applied on a daily basis? Provide details.

Pages 2207, lines 28 onwards: Did you compare the correlations between GCMs precipitation to the observed data? GCM simulations cannot produce observational sequence of events so the skill must be evaluated using climatology rather than the time series. Clarify.

Page 2208, lines 24-27: It is incorrect to say that only B, Ws and Ds are the only unknown parameters in this study. How about the soil depths as they can vary in different topographical conditions? Most of the soil properties that are estimated at gridded scale are approximations and they can vary at point locations.

Page 2214, lines 12-15: Is scenario based uncertainty minimum over all the time periods? Explain.

Page 2220, lines 12-15: The combined response of LU and climate conditions (Qint) may be non-linear. Therefore, Qint – Qclim may not yield contribution of LU alone. Explain. Also state the assumptions made.

Both Introduction and Conclusion sections can be improved. The limitations of this study needs to be discussed. The VIC model uses corn as a reference crop. But the crop parameters for the crops grown in the UGB will be different than the vegetation parameters of corn. How does that affect your results?

It should be mentioned in the text that the crops grown in the UGB are rainfed, right?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 2201, 2015.