Public justification (visible to the public if the article is accepted and published): Thank you for submitting your revised manuscript. Before proceeding, I have a few additional comments that may be helpful for improving the presentation quality of the manuscript: **(1)** please include a concise, consistently named end-to-end description of the data-generation pipeline (e.g., from Stage IV, downscaling, bias correction, to IRC/IRC–ICC products) and ensure terminology is consistent across the text, figures, and repository; **(2)** please add a brief user-facing paragraph stating the key assumption behind the streamflow-constrained correction (i.e., outlet mismatch attributed primarily to precipitation error under negligible hydrologic model/parameter uncertainty), and noting when the approach and resulting data is expected to work best and when users should apply caution; and **(3)** please confirm that the repository includes clear metadata, versioning information, and a short README that maps repository files to the products described in the manuscript. Thank you for your attention to these points.

Parts (1) and (2) as described below were added as paragraphs to the manuscript in the Data section.

(1) The StageIV-IRC precipitation data consist of precipitation fields at 250m every 5 min for each event and headwater basin. The StageIV radar product was first downscaled from 4km to 250m using fractal downscaling, resulting in $STIV_D$. Hourly data were linearly interpolated to 5 minutes. The IRC-ICC framework was applied to $STIV_D$ to derive the StageIV-IRC product that is made public for all events across all basins except for Basin 05. Because high quality data are available from rain gauge network in Basin 05 since 2007, a series of precipitation corrections based on these data was applied to the $STIV_D$ data including event-scale bias correction, decadal-scale bias correction, and ordinary kriging. The resulting data is $STIV_{DBKC}$. For Basin 05, the IRC-ICC framework was applied to $STIV_{DBKC}$.

(2) This work relies on an uncalibrated distributed hydrologic model to simulate rainfall-runoff response. Model parameters are obtained from the literature and from publicly available datasets. The key assumption in this work is that precipitation uncertainty of extreme events dominates over other hydrologic uncertainty tied to model structure and model parameters. Consequently, differences between simulated and observed hydrographs at stream gauge locations are attributed to precipitation errors upstream in the contributing watershed.

This work is expected to work the best for heavy precipitation events that are typically associated with large precipitation measurement and estimation uncertainties. It is

recommended that readers should address uncertainties in precipitation estimation at watershed scale before parameter calibration in hydrologic modeling studies.

(3) The repository includes clear metadata, version information, and a README file for reading the datasets that correspond to the manuscript.

Thank you