

Interactive comment on “Attributing the 2017 Bangladesh floods from meteorological and hydrological perspectives” by S. Philip et al.

Anonymous Referee #1

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Dear Editor, The submitted manuscript entitled "Attributing the 2017 Bangladesh floods from meteorological and hydrological perspectives" is a well written and structured paper. They have analyzed 10-day precipitation index for extreme events in August as well as river discharge over Brahmaputra basin. I have a few comments for improving the paper:

It is unclear why 10-day average precipitation is considered where the 1-day or 5-day maximum precipitation are well known as flood index.

Please explain the role of temperature in precipitation change. Based on the ground observations, can you explore a relationship between them over the study area?

I have a concern about the validity of scaling the GEV parameters (location and scale)

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similar to Clausius-Clapeyron (CC) relationship in the context of urban climate. The observed global mean surface temperature (GMST) is a feature confined to the boundary layer, whereas, precipitation is formed in clouds that develop in the free atmosphere up to a height of several kilometres, so it is unlikely that the surface temperature has some effects on precipitation in terms of the CC relationship. I would therefore recommend making the physical meaning of this scaling clearer.

Moreover, it is not clear the CC relationship exhibited by 10-daily extremes in your study area linked with convective nature of precipitation.

Add some details into the Statistical methods for trend detection. Time series of parameters are may be autocorrelated (temporal dependency over times scales of several years). I am wondering whether the authors took these autocorrelations into account or not.

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