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

Anonymous Referee #2

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Cause of the severe floods and their occurrence tendency in relation to climate change are very important topic in Asia, and quantitative assessments with in-situ data analysis with model verifications are expected. This study focused in the severe flood in 2017, and counterbalances of precipitation and discharge for the long-term return periods of floods are discussed based on observation data and multiple model output. I admire the author's challenges with many works, however, I could not capture (understand) the fundamental objectives and clear results from the paper. As presented in the title, "attribution" and "perspective" mislead the readers to know the target of the paper. I would like to suggest fundamental revisions of the paper.

Major comments 1) Ambiguous objectives and results Major objectives may be indicated in paragraphs at P4L25 (or P26L14), such as not only the precipitation vari-

ability but ability of discharge needs to be considered for estimating return period of floods. However, there are no explanations about the physical mechanism (perspective?) of extreme precipitation/discharge variability to cause flood events in Bangladesh based on hydro-climatological point of view with references. Regarding to the long-term changes of the ability of discharge in such a large scale watershed, they would be strongly related to changing of river sediments, micro-topography affected by previous floods, artificial settlements such as bridges or bank, or expansion of residences due to population increase. I could not understand how the long-term trends or probability for return periods of precipitation/discharge could link to an extreme event without assessments to cause flood in 2017 as a case study. Many considerations are discussed, however, clear results are not show, such as "trends are not significant (P1, L7; P26L19)", "values are less uncertain, (P1L12; L26L28)", "cancelation between A&B (P26L21)", etc.

2) Descriptions of chapters are like reports, not as in article. This study prepared several kinds of observation or model based data, and analyzed long-term probability. Do you want to compare something or ensemble to produce better predictions? Forecast map of Aug. 2017 was already shown in Fig. 1, but what is the problem for this prediction? In the Section 3, observation of water level was additionally analyzed, but why the analysis of discharge is not enough? Usually, discharge is calculated based on water level, and there is not discussion of water level in the section of "Model analysis". In many parts, the authors described all the matter of what they did as reports, but reader can not capture reasons and corresponding results based on logical explanation.

3) Many careless parts for reader. Explanations are insufficient and can not understand the explanations in many parts. I would like to ask brush up the paper again, such as; > Where is a green circle, Brhamaputra, too small words in Fig.1 > What is the "attribution methods" at P4L30? > What the scale of "past, present future" stand for ? (P4L33). > You use CPC data "for what?", P5L17. > What is the "same analysis" at P6L8? > Confusion of the study order exists, such as in 2.2.1, such that Use 3

experiments Transient experiment Two time slice experiments Large ensembles are created First set of experiments,,, A second climatology,, A third ensample,,, The second set of experiments A third set of experiments,,, > "several river discharge simulations" at P8L28, corresponds to five different model experiments or several different setting in the same model? Or, simulations at several rivers? > Several figures are shown without explanation, such as Fig.3b, Fig.5a, etc. > "Large uncertainty in the accuracy of data " at L6P13, how you detect them and why you used them? > Etc..

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