

REVIEW of

“Climate and the September 2014 flood event over Mountainous Jammu and Kashmir, India: Physical explanations based on observations and modelling” By Sumira et al.

MAJOR

1. The presentation quality has to be improved, as I (and both referees) mentioned previously.
2. The title is still not suitable for the content of the article. I would suggest something like: “Analyses of temperature and precipitation in the Indian Jammu-Kashmir for the 1980—2016 period: Implications for remote influence and extreme events”
3. “respectively” is used at many places without “respective” cases.
4. Fix the confidence interval you wanted to discuss and then just say “significant” or “insignificant”. Otherwise, it would be confusing if you use $S=0.01$ and $S=0.05$ (line 30, 31-33, and throughout the article)
5. Line 184 and many other places you have used “climatic variations”. What are these climatic variations? How do you find the changes or variability in climate without analyzing the temperature, precipitation or related parameters?
6. Section 4.3: In this section you have only used NAO. So how would you know that this is the main reason for the variability in temperature or precipitation?
7. You have also used “climatic” at many places for “climate”
8. You have used three pages to describe the PV and temperature/rainfall correlation analyses. The sections need to be shortened, as there are no new results. Perhaps, you could describe the connection for a station in detail and then discuss how other station measurements differ from the former.

MINOR

Line 19: what are these climate settings? Be specific.

Line 21: short-term (similarly long-term)

Line 36: “show”

Line 38-39: What are the reasons for the difference?

Line 22-24: Just write that you have used measurements from six stations in the valley and long-term simulations from the WRF model. That complex sentence is very hard to comprehend.

Line 51: climate change

Line 52: in the coastal

Line 55: “and (4)”

Line 54: “significant” delete “the”

Line 56, 59: remove etc.

Line 67, 68: remove PT when you mention potential temperature surfaces, as you have already mentioned “K” there. Use “e.g. 350 K”

Line 69: PV is conserved everywhere at all times?

Line 77—78: western disturbances and monsoon. Else, write all those “etc” things there. There are several “etc” in this manuscript, which is not a good “word” choice. If you know the related processes write those or give some examples.

Line 78: the vertical distribution

Line 79-80: please rephrase the sentence, very difficult to understand this now

Line 84: write like, “Kashmir floods in 2014, Leh floods in 2010”

Line 87: and distinguish

Line 94: PV is considered as Rossby wave activity?

Line 100: “Jain (2009)”

Line 106: that minimum

Line 112: what are these hydrometeorological parameters? Be specific.

Line 114: data pose

Line 115—116: climatic variations in weather parameters? Please write the change in that particular parameter, instead of that phrase.

Line 117: are necessary for understanding

Line 119: climate of the Himalaya

Line 127: “, respectively” and similarly at other places

Line 141: hard to comprehend this sentence “to be clarified with NAO only”

Line 144: not the connection between NAO INDEX and precipitation, but NAO and precipitation. Index is just a number or set of numbers. Rewrite similar statements elsewhere in the article.

Line 161: write “3.1 Measurements and Model simulations”

Line 163: Please write “The data are analysed carefully....”

Line 170: Space before “. Trends...”

Line 184: This is not correct. You are just correlating the NAO Index with temperature and precipitation. There is no “climatic variations of mean temperature” unless you define it.

Line 221-222: Is this the best parameterization scheme for the Indian region?

Line 225: Delete “Priyanka”, Just Ghosh et al.

Line 231: What are “climate data”? Specify the data here.

Line 287, 290: “insignificant level” for confidence intervals. You need to define that with respect to your estimates (e.g. 95% CI). Just write that they are “statistically insignificant”.

Line 296: Influence of North Atlantic Oscillation

Line 306-307: This is not a result, but a guess. If you find something significant from your study, please indicate that clearly. “The analyses show significant correlation between NAO Index and precipitation; indicating a possible connection between NAO and rainfall in the Kashmir, where the positive correlation suggests” something like this.

Line 309: “at all stations...”

Line 310: downscaled

Line 311: “0.47” is good correlation?

Line 317-318: “A detailed study on this topic will be presented in a separate paper.” Write something similar.

Line 334—335: write something this sort: “This is consistent with the model results of Wiltshire (2013)”

Line 340-341: give a reference for this statement

Line 357: Please note the study period also, as the trends depend on the length (period of analyses) of the data sets, and then compare trend during similar periods.

Line 362: Give reference for this statement.

Line 396: “Furthermore”

Line 407: “propagate”

Line 408: delete “clear from studies”. This may not be very clear for everyone. Write “This study shows that” or “suggested” or use similar wordings

Line 412: (e.g. Screen and Simmonds, 2014)

Line 412: In northern India

Line 424: They also note that

Line 450: delete “PT” and at other places too

Line 453: “Therefore, PV in the upper troposphere varies”

Line 455-456: What are these sometimes and other times? years? Be specific here. Rephrase the sentence without “One can”

Line 465—4666: I am bit confused about the statement. How can you state that the particular correlation between PV and rainfall in 1999—2000 is just due to climate change? There was no effect of this climate change in other years? What do you mean by climate change here? I thought you are analyzing the changes in climate of the region in this study.

Line 477-478: The measurements show that the stations located near the Greater Himalaya...

Line 485: Equatorward

Line 486: “at both” and “except for January—March “

Line 502-503: The observations show that the high altitude mountains ...

Line 510: the connection between PV and precipitation ...

Line 512: PV and precipitation

Line 518: conditions such as local convection.

Line 530: subtropical

Line 532/535: there is no mechanism to “attract” the moisture there. Use “transport” instead

Line 539: what is “drifting climatically”?

Line 547: What is “climatic increase in tropospheric warming”?

Line 548: space before the bracket

Line 549: Space after the full-stop

Line 550: combined effect of

Line 554: again “climatically shifted”?

Look for corrections at other places