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## Interactive comment on "Brief Communication: Climate, topographical and meteorological investigation of the 16–17 June 2013 Kedarnath (India) disaster causes" by R. Singh et al.

## R. Singh et al.

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Reply to the Reviewer comments:

Report on: Climatic, topographical and meteorological investigation of the 16–17 June 2013 Kedarnath (India) Natural Disaster Event by Singh et al.

This paper presents a study on the devastating natural disaster event of 17–18 June 2013 at Kedarnath (Uttrakhand, India). Other two articles on this event from India are by Dobhal et al. (2013) and Joseph et al., 2013). There is some additional information in this paper, but needs to be clearly separated from earlier two papers. Therefore, I

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am suggesting a major revision along the points:

Reply: Authors thank reviewer for pointing out the important aspect of paper. The paper has been revised as per suggestions. We have separated out this paper from earlier published two paper by Dobhal et al., 2013 and Joseph et al., 2013. Pl. see lines 9-21 of page 4.

Introduction: The introduction is mainly about the site description and some part can go to the results. Most of the part of description to sites has already been given by Dobhal et al. (2013) and Joseph et al., (2013). Authors should give the brief introduction to the subject, then describe briefly what Dobhal et al. (2013) and Joseph et al., 2013) have done and what has not been done which is significant to investigate. This section is unnecessary very lengthy and should be written concisely.

Reply: As per suggestion the introduction of the paper is completely revised taking care of reviewer's suggestion. Some parts of introduction have been shifted to Section 2 (Site description and data sources) and Section 3 (observations and discussion). Some new references relevant references have also been added and later on in the paper e.g., works by Hong et al., 2011; Wang et al., 2011; Lau and Kim, 2012; Siingh et al., 2014.

Data Source: The first para is actually the results should be moved to next section (Observations and Discussion). I suggest revising this heading to "Data Sources and Site Description" which will contain the second para of Data Source.

Reply: As per suggestion of the Reviewer's first paragraph of section 2 (data source) has been moved in the next section 'Observations and discussion'. Heading of the section 2 has been changed as per suggestion i.e., Site description and data sources.

Observations and Discussion: This is also an unnecessary lengthy section which mixes description of side, information from introduction and what is already given in given by Dobhal et al. (2013) and Joseph et al., 2013). In this section authors should mainly

concentrate what aspects of this events were not explained/discussed by earlier work that your data is doing. There are many paras which should not be in this section-e.g. last three para: Kethannath town——River cutting", should move to introduction/site description, next para (May and June—) is not necessary, next para (Continuous—), is not necessary or should go to introduction.

Reply: As per the suggestion of reviewer the section 'observation and discussion' has been revised and concentrated on the results which in different from previous works and have tried to add to understand the causes of disaster.

Conclusion: Second para- what is new in this from Dobhal et al. (2013) and Joseph et al., 2013)? This may does not seem to be there.

Reply: We agree! Second para- is deleted.

Figuer1. It just has very little new addition over Figure 5 of Dobhal et al. (2013) which does not add any significant new information. It should be removed.

Reply: Agreed! Figure 1 deleted as per suggestions. A new figure 1 depicting 'Progress of Indian Southwest monsoon in 2013' is incorporated to better understand the causes of disaster.

Figure 2. What is the aim of comparing the ground based and TRMM rainfall data. It is understood that there should be correlation between both with higher values by ground based observations. TRMM is already given in figure 2 in which ground based measurements could also be added. This figure is not needed.

Reply: Figure 3 is removed as per suggestion.

The grammar of the paper is very poor and need significant improvement.

Reply: The paper is thoroughly revised and we have been tried to improve the grammatical error.

I suggest little change in the title of the paper" Climatic, Topographical and Meteorolog-C490

ical Investigations of the 16-17 June 2013 Kedarnath (India) Natural Disaster Event.

Reply: Title modified as per suggestion of the Reviewer's.

Summary. The paper needs significant reorganization and improvement before it could be considered for the publication.

Reply: As per the suggestions we have reorganized the whole manuscript so that clarity of the topic of the paper is conveyed to all.

Please also note the supplement to this comment:

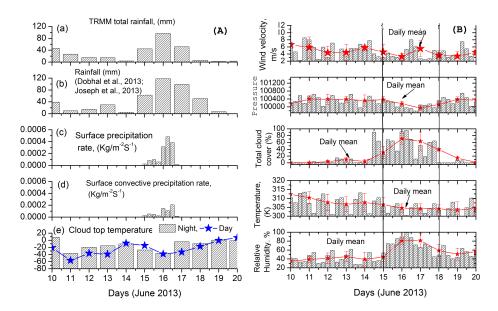
http://www.nat-hazards-earth-syst-sci-discuss.net/3/C488/2015/nhessd-3-C488-2015-supplement.pdf

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 941, 2015.



**Fig. 1.** Progress of Indian Southwest monsoon 2013 (Source: http://www.imdpune.gov.in/mons\_monitor/mm\_index.html).

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**Fig. 2.** Figure 2. (A) Variation of daily mean (a) TRMM total rainfall (b) rainfall (Dobhal et al., 2013), (c) surface precipitation rate, (d) surface convective precipitation rate, and (e) cloud top