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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Aerosol-induced high precipitation events near the Himalayan foothills" *by* Goutam Choudhury et al.

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1. Have you checked the 3 hourly precipitation after the event day? May be it continues increasing in the next days, which can be a reason of low extreme precipitation threshold. 2. The value of constants (Cp and L) used in equation-1 should be mentioned in the literature. 3. In line 108, you mention "anomaly of a parameter is calculated by first computing the anomaly for each event day and then averaging over all the events". Please also include an explanation of how you calculated the anomaly. 4. In lines 131-133, while discussing the boundary layer height anomaly, you describe the impact of high humidity values, during high AOD conditions, on the convection growth. This doesn't fit in the paragraph. In lines 191-192, you also explain the possibility of higher AOD due to high relative humidity values. How would you justify the two statements?

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5. In line 157, what do you mean by "the available air parcel"? Does it mean the air parcel which accumulates moisture and aerosols during day time via AECI mechanism? Please modify it accordingly. 6. In line 194-195, you mention "we did not have the AOD observations from MODIS at every grid point inside our domain". What I understand is you did not have the MODIS AOD observations at every grid point inside your domain for the individual events and not after averaging or making composite. Please rephrase the sentence. 7. The conclusion is missing an overall explanation of the AECI mechanism in the context of the Himalayan region. After concluding the findings in four bullet points, please include an overall explanation of how these findings combinedly result in an extreme precipitating event over the Himalayan Foothills. 8. The site map depicting the topography of the region can be improved further with higher resolution one. Please consider the higher resolution one in the revised version

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