

## ***Interactive comment on “Aerosol chemistry, transport and climatic implications during extreme biomass burning emissions over Indo-Gangetic Plain” by Nandita Singh et al.***

### **Anonymous Referee #1**

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Singh et al. analyse the effects of biomass burning on aerosol distribution, chemistry, and radiative forcing over the Indo-Gangetic Plain combining in situ and satellite-based observations and radiative transfer calculations. Manuscript can be considered for publication in ACP however several comments should be addressed.

Page 1, l.36: “weighted of air trajectories” to “weighted air trajectories”

Page 1, l.41: “must need to be studied” to “are needed”

Page 1, l.42: “in much finer scale to improve parameterization of aerosol/-climate model across the region.” This is not clear. Rewrite or remove.

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Page 4, l.10: wunderground.com data is validated with regional weather monitoring station data! Why is that needed, and how good the validation results turned out to be?

Page 4, l.13: What is meant by simulated meteorological observations?

Page 4, l.14: “measure” to “analyze” in context of NCEP data.

Page 8, l.12: “OPAC derived outputs were tuned in respect to measured relative humidity”. This is not clear. OPAC outputs are for different humidity ranges. How could output be tuned further! clarify / rewrite

Page 8, l.15-16: “as an input” to “as inputs”

Fig.8: Top row, Y scale should have been 0-10 km or so, there is not much data seen above that altitude

Section 3.3.: key sources of BC aerosols over the stations and nearby should be discussed based on literature (Kumar et al., JGR, 2015)

Page 13, l.23: “has” to “have”

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