

Interactive comment on “The Indian summer monsoon rainfall: interplay of coupled dynamics, radiation and cloud microphysics” by P. K. Patra et al.

Anonymous Referee #3

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In this manuscript, the relationship between Indian summer monsoon and aerosols is analyzed and discussed in several aspects using reanalysis and satellite data, and then the authors conclude that the aerosol direct and indirect effects play important roles of interannual variation of Indian summer monsoon as well as dynamical processes. They suggest that the aerosol effects can complement to explain it which is not simulated by the model only considering dynamic processes. This perspective is novelty and noteworthy, therefore I suggest that this manuscript has potential to be published by ACP after the authors fully address my comments as shown below.

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1. The interannual variation of SST anomaly is also shown in Figure 1, but there are no discussions about it in the manuscript. Please add a few discussions.
2. Section 3.2.1 and Figure S3: Do the fire accounts along the coast of Persian Gulf really indicate biomass burning? Don't they indicate activities of oil production?
3. Section 3.2.1: "The amount of carbonaceous aerosols transported to the Indian region from Middle-East was greater during July 2002 due to changes in the pattern of fires". It is difficult to understand it from Figure S3. Figure S3 show amount of CO-like traces in the Indian region in July 2002 is almost same as much as in July 2003, and moreover, it is larger in June 2002 than in June 2003. The authors should describe in more detail for readers to understand easily.
4. Figure 1: Please make meaning of "5-pt mean" clear in the legend.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 2879, 2005.

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