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Atmospheric Chemistry and Physics Discussions

Interactive comment on "A daytime climatological distribution of high opaque ice cloud classes over the Indian summer monsoon region observed from 25-year AVHRR data" *by* A. Devasthale and H. Grassl

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We would like to thank the reviewer for her/his useful comments and suggestions.

- There are no consistent and accurate measurements of temperatures at 150 hPa available for the chosen study area at the required spatio-temporal resolution and time period for the present analysis. Based on a synthesis review of the literature, we believe that the 200K is a reasonable threshold to classify deep convective clouds that reach the bottom of the TTL (at least in the 0-25N latitude band, where the bulk of penetrating convection occurs). The intraseasonal and interannual variability in clear-sky temperatures at this level is very low.

- In order to be more explicit in mentioning that that our dataset alone cannot provide insights into the mechanisms of monsoon, we have slightly re-phrased and added following line in the last paragraph of section 3.1 of the revised manuscript.

"Although this dataset in itself is not enough to corroborate or refute any mechanism, it could be a useful tool in investigating some of the aspects in this context."

- The typographical errors in pages 26, 28, 29, 30, 31, 36, and 37 are corrected in the revised manuscript. Also minor grammatical corrections are made at few other places.

- The analysis based on the long-term AVHRR data (or any other data from sensors onboard NOAA satellites) is likely to be influenced by the orbital drift bias. It is important to be aware of, consider and quantify how this bias might affect the analysis. Therefore, we think that the both Figs. 14 and 15 are necessary to show that spatial pattern of variability is not affected very much by the orbital drift for Class II and Class III clouds, and has affected only to few modes of Class I clouds. The figures 14 and 15 show this comparison, and are necessary for the fidelity of the results presented in our analysis.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 23, 2009.

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Interactive Comment