Atmospheric Chemistry and Physics Discussions

Interactive comment on "Operational retrieval of Asian sand and dust storm from FY-2C geostationary meteorological satellite and its application to real time forecast in Asia" by X. Q. Hu et al.

X. Q. Hu et al.

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This referee gave our paper many good comments and corrected some deep mistakes. We thank him for his nice advices. The followings are our response to his comments. The general comments referee attended encourage us to take more improvements for our paper. It is needed for the paper that a short description of CUACE/Dust would be useful in the introduction. We will add this part in the instruction of our paper. Specific comment 1: The similar technique as volcanic ash detection is applied for dust identification in our algorithm. It is based on the fact that the similar characteristics of airborne dust with the volcanic ash are found in BTD[11,12], BTD[3.7,11] and RAT[3.7,0.65] from

the true observation signal of these bands by several dust cases. There are also other several investigation showing the same results. So we don't think more details about the material difference between dust and volcanic. Specific comment 2: we adopt completely the comment of the referee. It is more scientific that the brightness temperature of the surface Ts should be replaced by Tref = Tbb(max): maximum value over the 10-day period of the reference image. In fact, Tref is not Ts in all situation. So Ts is wrong definition here. Specific comment 3: it is true that the observations and simulations show that the IR split windows technique provides intricate results, especially the quantitative BTD[11,12] relation to accurate dust loading. It is very complicated from our investigation. But in our algorithm, the negative BTD[11,12] is just used as one identification factor of the dust targets from others. It is enough for this. Specific comment 4: the referee pointed out one mistake of our description. P. 8402 L.13 "Reference image(RI) and Difference Image (DI)" is replaced by " the satellite observation signal of three bands 3.7µm, 0.65µm and 11µm as section 2.3.2". Specific comment 5: we use the surface observation to validate the SDS-IDDI just because there are little parameters of volume dust loading in the presence. It can not mean that dust is generally not transported in altitude over China. We are planning to use better dust quantitative parameters such as Aerosol Index (AI) from TOM or OMI for validation of dust presence and loading. Specific comment 6: it a nice advice that we should magnify the images of Figure 5 for more informatory show. We thanks the referee #2 give us so many technical corrections in wording and misprints. We will check the whole paper sentence by sentence, word by word.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 8395, 2007.

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