

Global distribution of anthropogenic dust aerosol from CALIOP satellite

*BIN CHEN¹, Jianping Huang¹, Zhijuan Zhang¹

1. College of Atmospheric Sciences, Lanzhou University, China

Anthropogenic dust aerosols are those produced by human activity, which mainly come from cropland, pasture, and urban in this paper. Because understanding of the emissions of anthropogenic dust is still very limited, a new technique for separating anthropogenic dust from natural dust using CALIPSO dust and planetary boundary layer height retrievals along with a land use dataset is introduced. Using this technique, the global distribution of dust is analyzed and the relative contribution of anthropogenic and natural dust sources to regional and global emissions are estimated. Local anthropogenic dust aerosol due to human activity, such as agriculture, industrial activity, transportation, and overgrazing, accounts for about 22.3% of the global continental dust load. Of these anthropogenic dust aerosols, more than 52.5% come from semi-arid and semi-wet regions.

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