Aerosol Absorption by Black Carbon and Dust: Implications of Climate Change and Air Quality in Asia

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Atmospheric aerosol distributions from 2000 to 2007 are simulated with the global model GOCART to attribute light absorption by aerosol to its composition and sources. We show the seasonal and interannual variations of absorbing aerosols in the atmosphere over Asia, mainly black carbon and dust, and their linkage to the changes of anthropogenic and dust emissions in the region. We compare our results with observations from satellite and ground-based networks, and estimate the importance of black carbon and dust on regional climate forcing and air quality.