

Aerosol and Climate in China: In-situ Observation, Remote Sensing and Understanding

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Aerosol and climate have been found to be intertwined on a wide range of scales. Their interactions are particularly strong and complex in Asia centered in China associated partially with its dense population, fast development, and special topography. Anthropogenic aerosols, particulate pollutants in the atmosphere, can affect the atmospheric processes in numerous ways. While mounting evidence have been presented to illustrate their impact on radiation, temperature, precipitation, severe storms, it has been a daunting task to identify, understand and quantify the various effects, working mechanisms and connections. Few places are more ideal than China to unravel the complex relationships where pollution has been severe and changed rapidly with strong long-term up- and down-trends. By means of field experiments, satellite remote sensing and modeling, our team has tackled with the complex problems in a systematic approach. I will present some major findings of these studies.