

**AEROSOLS IN TAIWAN: IMPACTS ON REGIONAL AIR QUALITY  
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Aerosols are one of the most detrimental air pollutants over Taiwan. Through their direct and indirect effects on atmospheric radiation, they also have a significant impact on the regional climate. We have made a study of the distribution and sources of aerosols over Taiwan by analyzing ground-based measurements of air pollutants and meteorological parameters. A major finding is that a main contributor to the aerosols in Taiwan is from the synoptic scale transport. In winter and spring, Asian Continental sources can contribute to more than half of the aerosols observed at surface stations in Taiwan. Potential impacts on the climate in Taiwan are also investigated. A decreasing trend in sunshine duration has been observed during Taiwan's rapid economic developing period that started in the 1960's. The trend is most likely caused by an increase in regional clouds and/or cloud albedo as a result of increased anthropogenic aerosols. The increase in clouds/cloud albedo obviously has lead to other climate changes such as a decrease in the diurnal temperature range (DTR). However, it is difficult to separate the regional climate effects of aerosols from those caused by the urban heat-island effect.