



Characterization of gaseous pollutants and fine particles at a rural site in the Yangtze River Delta

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The ambient O₃, CO, NO-NO₂-NO_x*, SO₂, NH₃ and PM_{2.5} have been monitored at Chongming Island, a rural site in the Yangtze River Delta in the Shanghai area, from October 2008 to September 2009. In this presentation, we report the measured concentration levels, diurnal/seasonal variation, of the species of interest. An analysis of the pollutant sources is also presented. The average concentrations of O₃, CO, SO₂, NO, NO₂, NO_x*, NH₃ and PM_{2.5} are 36.7 ppb, 0.7 ppm, 14.3 ppb, 4.8 ppb, 13.5 ppb, 19.7 ppb, 24.9 ppb, and 54.4 $\mu\text{g}/\text{m}^3$, respectively. The concentration levels of the gaseous pollutants are lower than the Grades I of both the Chinese Ambient Air Quality Standards and the primary standard of US National Ambient Air Quality Standards.

The diurnal profiles of the primary pollutants (CO, SO₂) show peak values before noon. The NO and NO_x show the similar profiles as CO in warm season, but have bimodal profiles in winter, suggesting the possibility of influence from transport emission in the season. Most of the primary pollutants have maximum values in winter, indicating the influence of fuel burning source during the heating period. O₃ keeps high level in the summer. The surface concentration of O₃, Ox (O₃+NO₂) and NO₂ at the site and the satellite observed tropospheric columns O₃ and NO₂ have similar seasonal pattern. The PM_{2.5} concentration peaks in summer, which has bad correlation with AOD. The relationship among the primary pollutants indicates a significant influence of transport emission over the region. In autumn, the biomass burning emission also seems to be one of the major sources for the air pollutants.