



Spatial and temporal variations of major pollutants in Hong Kong

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Eight years (2000-2008) of hourly data obtained from the Environmental Protection Department (EPD) in Hong Kong is examined together with meteorological data recorded at automatic weather stations by the Hong Kong Observatory (HKO). Respirable suspended particulates (RSP), SO₂ and NO_x all show maxima in the fall and winter while minima are seen in summer. Analysis of the diurnal cycle show minima in early morning hours shortly before sunrise. Factors affecting the hourly variations, such as wind direction and speed, mixed layer depth, and source emission, are examined. High RSP levels are associated with winds from the north and northwest, suggesting cross border transport, while relatively pristine conditions prevail when the surface wind is southerly. Assuming that daily variations are dominated by local emission and cross border transport, the contribution of local is estimated to be around 50% with large interannual variations. Annual trends in RSP show a maximum in 2003 winter to 2004, which is associated with relatively low wind speed. NO_x concentration, which is mostly contributed by vehicular emission show a decrease after 2004, which may be attributed to implementation of emission policies on vehicles.