1.097 CHARACTERISTICS OF O3, NOX, CO, CH4, NMHCs AND PM2.5 NEAR THE ROAD SITE IN HO CHI MINH CITY, VIETNAM.

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Abstract:

Continuous measurements of air pollutants including methane (CH_4), none methane hydrocarbons (NMHCs), oxides of nitrogen (NO, NO_2 and NO_x), ozone (O_3), carbon monoxide (CO) and fine particles ($PM_{2.5}$) near the road were conducted from May 2013 to April 2015 in Ho Chi Minh City, Vietnam. This study aims to investigate the temporal variations of the pollutants with the meteorological conditions in order to know the characteristics of the pollutants supporting for environmental management in the city. The diurnal trends of NMHCs, CO and NO_x increased two times a day, around 6h-8h and 17h-19h. The diurnal variations of $PM_{2.5}$ increased slightly at daily traffic hours from 6h to 11h. The high O_3 concentrations were observed during the period of daytime from 8h to 14h. In contrast to the other pollutants, the CH_4 concentrations were high at nighttime from 18h. The CH_4 levels were similar for all months during the wet season and decreased in the dry season. For NMHCs, NO_x, CO, $PM_{2.5}$ and O_3; the monthly averages in the dry season are higher than the wet season. The relationship between air pollutants and meteorological parameters showed that the concentrations of CH_4, NMHCs, NO_x and CO negatively correlated with temperature and solar radiation, while O_3 concentrations positively correlated with both factors. Humidity could increase the levels of CH_4, NMHCs and $PM_{2.5}$. Rainfall washed $PM_{2.5}$ out of the atmosphere and dissolved NO_x through wet deposition. *Keywords:* CH_4, NMHCs, CO, $PM_{2.5}$, NO_x, O_3, meteorological conditions