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Hourly and monthly ambient air formaldehyde variations in Mexico City

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Formaldehyde concentrations in ambient air were measured at the National University of Mexico, Mexico City. Air samples were taken as a function of time of day, from January to December of 1988. Maximum concentrations were obtained at noon. The high mixing ratios found at morning and early afternoon seem to indicate a diurnal variation in the boundary layer. The apparent photochemical nature of H_2CO seems to favor the high concentrations found in hours of the highest actinic fluxes, but in Mexico City the H_2CO concentration depends in great part from the direct emissions, and to be formed from hydrocarbon precursors. The rapid changes in H_2CO concentrations were probably caused rather by transport, deposition and wet scavenging. Small differences in monthly means were observed. The lowest value was found in March, month characterized by strong winds. The rainout and washout contributed to deplete the high H_2CO concentrations, since lower values were obtained during the rainy season. The calculated overall photolytic life time ranged from 3.2 to 10.5 h, enough time to account for the observed harmful effects of H_2CO upon the inhabitants of Mexico City.