Analysis of CO_2/H_2O Concentration and Flux Characteristics with The Beijing Meteorology Tower Data

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CO_2/H_2O concentration, wind speed and temperature were measured with CSAT3 3D - sonic anemometers and Li-7500 open path CO_2/H_2O analyzer at 7 different heights of the Beijing 325m meteorology tower from May to November, 2012.
Based on the collected data and the use of eddy covariance method, the diurnal and monthly dynamics of profiles and fluxes of CO_2/H_2O were analyzed and calculated with EdiRe (http://www.geos.ed.ac.uk/abs/research/micromet/EdiRe/).
The profile of CO_2 concentration showed S pattern. Before the heating period, CO_2 concentration was normally between 300-500 ppm (May. to Oct.), and rose to 500-600 ppm in the heating period (from Nov.). The result of CO_2 flux showed that urban atmospheric CO_2 was net emissions. There was a positive relationship between CO_2 flux and temperature. With respect to sensible heat flux and latent heat flux, CO_2 flux is more influenced by human impact.

Key Words: Meteorology Tower; CO_2/H_2O; Concentration; Flux; Eddy Convariance