15) POSTER

15) **Study of the mean wind speed profile above and within the canopy of the forest reserve Cuieiras in Central Amazonia.**

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The vertical mean wind speed profile was studied utilizing data measured from a 50 m micrometeorological tower in forest reserve Cuieiras – ZF2, km 34 (2°36'32, 67"S, 60°12'33,48"W) some 60 km north of Manaus, in Central Amazonia. The measurements of wind speed were made at four heights (two above the canopy and two within the canopy) using cup anemometers logged at 30 seconds intervals. The data represent the period from June to November 2001. To perform the vertical mean wind speed profile analysis of 30 min averages were used. The mean wind speed profile data obtained during early morning (00:00 to 06:30 local time (LT)), day (07:00 to 17:30 LT) and night (18:00 to 23:30 LT) were compared with the vertical temperature and CO_2 concentration profiles. A least squares fitting technique was used to fit polynomial curves to the vertical mean wind speed profile using Matlab-5 computer code. For the mean wind speed profile data the best fit was obtained using third degree polynomial functions. The highest wind speeds occur between 10:00 and 16:00 LT, which corresponds well with the maximum air temperatures, usually between 12:00 and 15:00 LT. CO_2 concentrations begin to decrease soon after 08:00 LT and increase soon after 17:30 LT. The period from 10:00 to 16:00 HL, when the maximum values of mean wind speed occur is also the period of major convective activity, caused by atmospheric instability associated with the diurnal solar cycle. The rate of decrease in mean wind below the canopy was shown to be related to the density profile of the foliage.