

A13 FOUR YEARS CARBON MONOXIDE VERTICAL PROFILES STUDY AT THE AMAZON BASIN

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The Carbon monoxide (CO) has been used like atmospheric biomass burning tracer in different scales. To elucidate the actual contribution and the flux of carbon produced from biomass burning in the Amazon Basin, determine the concentrations of CO is an important tool. Were performed vertical profiles at 4 sites in the Amazon Basin (SAN -Santarém, TAB -Tabatinga, RBA -Rio Branco and ALF -Alta Floresta) 2 times per month over the period 2010-2013 and to calculate the CO flux it was applied the Column Integration Method (Miller et al, 2007). At the 4 locations were identified a correlation between the CO flux, precipitation and counts of fire spots. In ALF, located at Arc of Fire (Arco do Fogo), was observed that the peak of CO emission coincides with the maximum of fire spots and precipitation decreases, thereby making evident the emission from the wet and dry season. This is the site where the highest concentrations of CO were observed and, unlike TAB and SAN, were determined a strong vertical mixing. At the sites, where there is a predominance of forest like TAB and RBA, the observed flux showed the same behavior than ALF, however in a minor emission. SAN, located in the Amazon northeast region, receives a great influence of anthropogenic emissions from the northeast Brazil region. The relation between the concentrations of CO and CO₂ (carbon dioxide) in the profiles was performed, considering only the profiles with a clear plume to determine the emission ratio, where it was used only the portion of profile above 1.5km, approximately the PBL (Planetary Boundary Layer). The 3 sites with fewer anthropic impacts had similar ratio CO/CO₂, in contrast to what was determined in Santarém.

References:

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