

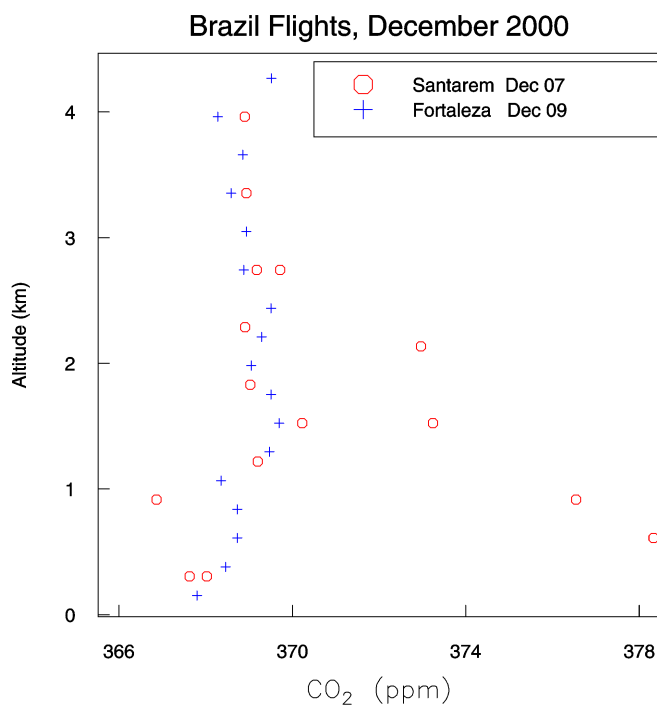
Vertical Profiles of CO₂ and Other Trace Gas Species Over the Amazon Basin

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As part of the NASA Large Scale Biosphere-Atmosphere Experiment in Amazônia air samples are collected during regular flights over the central Amazon Basin near Santarém, Brazil, and over the Atlantic Ocean off the east coast of Brazil near Fortaleza. Small charter aircraft are used for the flights, and the samples are collected using automated equipment. The samples are shipped to CMDL in Boulder for analysis for CO₂, CH₄, CO, H₂, N₂O, SF₆, and the stable isotopes of C and O in CO₂. Since the average air flow over this region is strongly dominated by the easterly Trade Winds, the data will give a measure of the change in trace gas and isotope composition during the advection of air across the Amazon Basin. Regional sources and sinks will leave imprints in the observed trace gas mixing ratios. Measurements of the anthropogenic tracer SF₆ provide an indicator for the penetration of northern hemisphere air into the study region. In addition, measurements of the ¹³C/¹²C ratio of CO₂ should give a measure of the relative amounts of C⁻³ (generally forest) and C⁻⁴ (mainly savanna and pastures) photosynthesis, since these processes have strongly different isotopic signatures. The data will represent the first long time series for these species obtained over the Amazon. Data is presented from the first several profiles, which began on December 4, 2000.



Vertical profiles of carbon dioxide at the end of the dry season. The elevated values in the lower atmosphere over the forest site (Santarém) as compared to over the Atlantic Ocean (Fortaleza) result from biomass burning.