



Strong couplings in the biosphere-atmosphere interaction in Atlantic Forest and Amazonia

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The intense interaction between the Amazon and Atlantic forests and the atmosphere helps to regulate atmospheric composition and climate over the region. These processes involve emission and deposition of aerosols and trace gases such as volatile organic compounds, ozone, nitrogen oxides, methane and many others. The biogenic aerosol particles emitted by the forest are the main cloud condensation nuclei (CCN) that regulate cloud formation, development and precipitation process. In this paper we present results from two sites in Brazil. One is in the Atlantic Forest in Southern Brazil and the second is in Central Amazon. The cloud condensation nuclei (CCN) concentrations measured in both sites are similar, as well as the ratio between CCN and total aerosol particle number measured using a TSI CPC. Aerosol size distributions measured using an TSI SMPS shows that no new particle formation events were observed in both sites. Aerosol composition is dominated by organic components at both sites, with potassium indicating that biogenic aerosol dominates the sources. Very low soil dust was observed in both sites. Also sulfate and nitrate concentrations are low. We will discuss the diurnal variability of measured chemical and physical properties and a detailed comparison of tropical and subtropical aerosol properties.

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