



## **Hydroxyl Radicals in the Tropical Troposphere during GABRIEL: Comparison of Measurements with the Box Model MECCA**

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Hydroxyl radicals play a major role in the chemistry of the troposphere and dominate its oxidation capacity during daytime. Its main source in the unpolluted troposphere is the photolysis of O<sub>3</sub> and following reactions with water vapour. The largest contribution to the global oxidation capacity occurs in the tropical region. The Gabriel campaign, Oct 2005, took place in equatorial South America (Suriname) to gain basic understanding of the dominant processes over the tropical rainforest and their influence on the HO<sub>x</sub> budget. Global models predict that the emissions of hydrocarbons from the rainforest reduces the amount of HO<sub>x</sub> and therefore the selfcleaning capacity significantly.

The presentation concentrates on understanding the HO<sub>x</sub> budget and its interdependence with other species measured during the campaign. Since OH and HO<sub>2</sub> have very short lifetimes, MECCA, a box model, is applied in steady state mode and used for detailed analysis. Hereby all measured species like radiation, O<sub>3</sub>, isoprene, NO, HCHO, CO, hydrocarbons are used as constraint parameters to model OH and HO<sub>2</sub>.

Large discrepancies were found over land during the afternoon that are correlated to the isoprene concentrations. This gives first indications that important reactions are not fully understood in the tropospheric isoprene chemistry.