



Concentrations and behaviour of atmospheric ammonia above the Amazon rain forest

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This poster reports, to our knowledge, the first ammonia measurements over the Amazon made with a real-time analyser (AiRRmonia wet chemistry analyser), providing an effective time resolution of 15 minutes. Campaign based measurements were made in above the forest canopy at two sites in the Brazilian state of Amazonia, in July 2013 at the ZF2/K34 tower, 55 km NNW of Manaus, and during September to November 2014 at the more remote ATTO site some 160 km NE of Manaus. These were complemented with weekly in-canopy gradient measurements by passive sampler at ATTO and a few days of AiRRmonia measurements at the forest floor.

The measurements are used to investigate sources, to quantify the canopy compensation points for ammonia and to estimate the surface / atmosphere exchange with the forest. The data are combined with information on aerosol size spectra as well as measurements of aerosol ammonium to investigate the thermodynamic equilibrium between gas and aerosol phase and to the potential role of ammonia in nucleation.