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NO and O₃ mixing ratios above the canopy in the rainforest

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Nitrogen oxides (NO_x = NO and NO₂) are chemical compounds that affect and control the abundance of ozone (O₃) and hydroxyl radicals (OH_x = OH and HO₂), the main oxidizing agents in the atmosphere. In pristine environments, these oxidizers react with biogenic volatile organic compounds (BVOCs), such as isoprenes, to produce oxidized secondary organic products. Further reaction with NO_x leads to the formation of nitrates. Nitrates deposit on surfaces and grow aerosol particles which eventually act as cloud condensation nuclei. This makes NO_x an important atmospheric component, even in low concentrations. Therefore, NO_x measurements are being made at the Amazon Tall Tower Observatory (ATTO) research site in the central Amazon forest basin, a pristine region.

Here we present the measurements of NO, O₃ and meteorological parameters collected at the Walk-up tower, at a height of approximately 40 m, just above the canopy.