

Atmospheric CO₂/CH₄/CO measurements at the Amazon Tall Tower Observatory (ATTO, Brazil)

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At the Amazon Tall Tower Observatory site (ATTO, Brazil; 2°08'S, 59°00'W), we run since March 2012 continuous, high-precision measurements at the 80 m walk-up tower with two CRDS analyzers (G1301 and G1302; Picarro Inc., USA) calibrated against the NOAA-2004, WMOX2007, and WMO X2004 scales for CH₄, CO₂, and CO, respectively. Sample air inlets are installed at five levels (79, 53, 38, 24, and 4 m a.g.l.). In order to bridge the switch-over time between the different inlet heights, the atmospheric signal is integrated by using 8 liter buffer volumes that are continuously flushed with sample air, which is then passed in parallel through both analyzers. While the sampled air is not dried for the CO₂/CH₄ measurement (G1301), a Nafion drier is used for the CO/CO₂ measurement (G1302).

The 325 m-tall tower at ATTO is currently being equipped with scientific measurement instrumentation. Since February 2017, pilot CO₂/CH₄/CO measurements using a G2401 analyzer (Picarro Inc., USA) are done from the top, 321 m a.g.l. level. The installation of the remaining inlet heights will take place until end of 2017.

We present here a summary of the performed tests on our installations, available data from the 80 m walk-up tower, and preliminary data from the 325 m tower.

Our work was performed within the frame of the German-Brazilian project ATTO and supported by the federal government agencies BMBF and MCT (BMBF grant number 01LB1001A and FKR 01LK1602A). We acknowledge the fundamental support by the Max Planck Society, INPA and UEA. Special thanks go to the Amazonas State SDS/CEUC-RDS Uatumã.

References

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