The AtmoSniffer version 0.4, a discussion of measurement priorities.

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The AtmoSniffer is a compact and lightweight air sensing laboratory that is being developed to fit a niche were portability and long range communications are critical. Currently, the AtmoSniffer’s mass is less than 1.5 kg, including the battery that will operate it at full capability for over seven hours without external power. The AtmoSniffer has onboard data logging to a microSD card in addition to live links via Bluetooth, WiFi, long-distance (over 50 km) radio, and cellular. The current measurement suite is PM, O3, NO2, SO2, CO, CO2, and NH3, in addition to temperature, pressure, and %RH. It also has a GPS and 9-axis inertial sensing. The initial version 1.0 might not have all sensors on line and will probably be limited to altitudes below 200 mb (12 km ASL). Tradeoffs of a lightweight, broad spectrum, instrument compared to benchtop systems include accuracy and resolution. To partly address this we are using multiple sensor technologies for each gas, when possible.

We will start with a discussion of the current prototype status, known limitations, and schedule. Then we’ll open a discussion about what uses such an instrument might have and what features should be designed (or not designed) into such a device to make it as useful as possible for the air measurement community.