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African aerosol and trace-gas emissions from the Central-African Bujumbura station.

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We present aerosol and trace-gas retrievals from the new Central-African measurement site of Bujumbura, where a new MAX-DOAS instrument and cimel sun photometer have been operational since late 2013. This is the first time that MAX-DOAS measurements are performed in Central Africa, which are critical to resolve the large uncertainties of satellite observations of trace gases and aerosols over this area. The Bujumbura region is a source of strong biogenic compounds and biomass burning products, and invaluable to study the export of African emissions to the Indian ocean.

Using the bePRO radiative transfer tool, we retrieve aerosol optical depths (AODs) and vertical extinction profiles for aerosols and trace gases such as NO_2 and HCHO. The AOD retrievals are compared to the co-located AERONET sun photometer measurements and further analysed to investigate seasonal and diurnal cycles in the observed variability or to detect biomass-burning events.For the trace gases NO_2 and HCHO, the ground-based MAX-DOAS vertical columns and profiles are used for tropospheric trace-gas validation of the GOME-2 and OMI satellites. We further discuss the representativity of the site regarding satelitte comparisons and modelling efforts, given its specific orography.