

Long-term Measurements from the GAW Cape Verde Atmospheric Observatory (CVAO)

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We present over ten years of measurements from the Global Atmospheric Watch (GAW) Cape Verde Atmospheric Observatory (CVAO, 16,848°N, 24.871°W), a subtropical marine boundary layer atmospheric monitoring station situated on the island of São Vicente. Almost continuous measurements of the trace gases, ozone (O₃), carbon monoxide (CO), non-methane volatile organic compounds (NMVOC), nitric oxide (NO), and nitric dioxide (NO₂), along with meteorological parameters, have been obtained. Other data from the CVAO, for example of greenhouse gases, aerosol, halocarbons, halogen oxides, total gaseous mercury (Global Mercury Observation System) are also available over various timescales. This year we add sulfur dioxide (SO₂) to the suite of measurements. Recent published work includes our discovery of nitrate aerosol as a dominant source of NO_x in the remote marine boundary layer, and analysis of our 4-year total gaseous mercury record, which suggests influence from an unregulated source of mercury from West Africa. We also present some early trend analyses and interpretation of our longer datasets. This September the MarParCloud campaign will be taking place at the CVAO, a project concerned with marine biogenic production, organic aerosols and maritime clouds. We also plan to carry out some air pollution measurements in the city of Mindelo alongside the Cape Verde national mobile air pollution monitoring facility. The CVAO has two sampling towers (7.5m and 30m) and additional air-conditioned space to accommodate visiting instrumentation. It is a global GAW station and data is submitted regularly to the World data centres (WDCGG and WDRG) in addition to the Centre for Environmental Data Analysis (CEDA, formerly BADC), along with associated metadata.

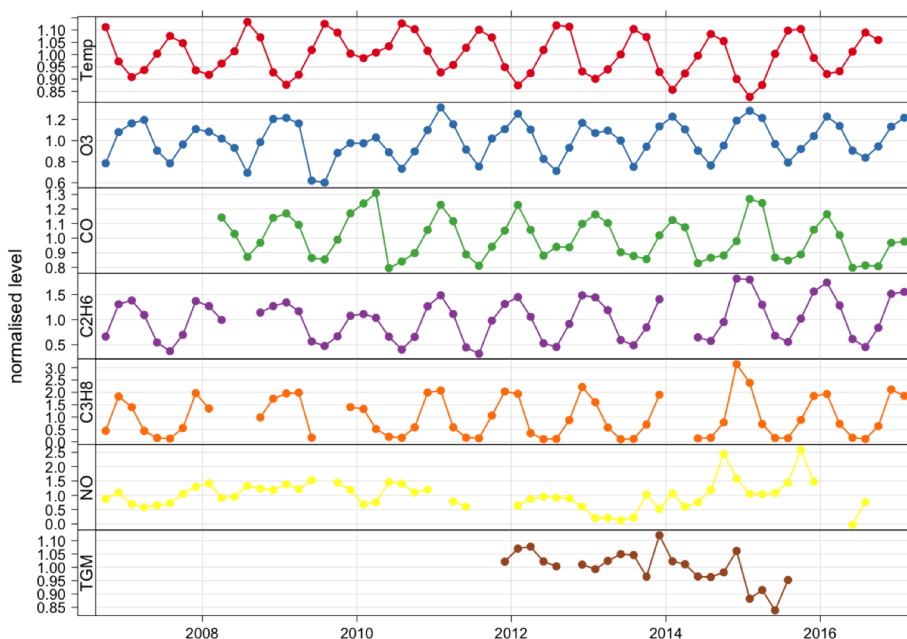


Figure 1. Time-series of species from the CVAO with concentrations normalised to their individual means over the entire time period.