Science Highlights from the Cape Verde Atmospheric Observatory (CVAO)

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The CVAO (16,848°N, 24.871°W) is a subtropical marine boundary layer atmospheric monitoring station situated at Calhau on the island of São Vicente, and has been in operation since October 2006. Almost continuous measurements of the trace gases O_3, CO, NM Volatile Organic Compound (VOC), NO, and NO_2 have been obtained. Other data from the CVAO; greenhouse gases, aerosol (physical and chemical parameters), halocarbons, halogen oxides, are also available over various timescales (see http://ncasweb.leeds.ac.uk/capeverde/ for more details). Through the European Union funded Global Mercury Observation System Project, atmospheric measurements of mercury began in 2011.

The observatory has hosted a number of field campaigns[1] and two more are planned as part of the recently funded Oceanic Reactive Carbon Project led by Dr Steve Arnold. The prevailing strong on-shore winds bring marine air masses with varying inputs of Sarahan dust, and of long-range transport from North America and Europe, thus the CVAO is an appealing location for both short- and long-term research into a variety of atmospheric phenomena. The background nature of the CVAO ensures that the data is used in a number of global studies, most recently within a study which looked at the contribution that global biomass burning makes to global anthropogenic emissions[2]. Measurements from the last 6 years will be presented as well as comparisons with the output of both GEOS-Chem and the CAM-Chem global chemistry transport models[3].

The CVAO is a Global Atmospheric Watch (GAW) station and so data is submitted regularly on daily, monthly and yearly timescales to the World Centre for the Greenhouse Gases (http://gaw.kishou.go.jp/wdcgg/) in addition to the British Atmospheric Data Centre (http://badc.nerc.ac.uk/home/index.html) along with associated instrument metadata. The observatory has recently been audited by GAW for O_3, CO and the greenhouse gas species.

[1]Lee et al., (2010) *Atmos. Chem. Phys.*, 10, 1031-1055. [2]Lewis et al., (2013) *Atmos.Chem.Phys.*, 13, 851-867. [3] Read et al., (2012), *ES & T.,46, 20,* 11028-11039.

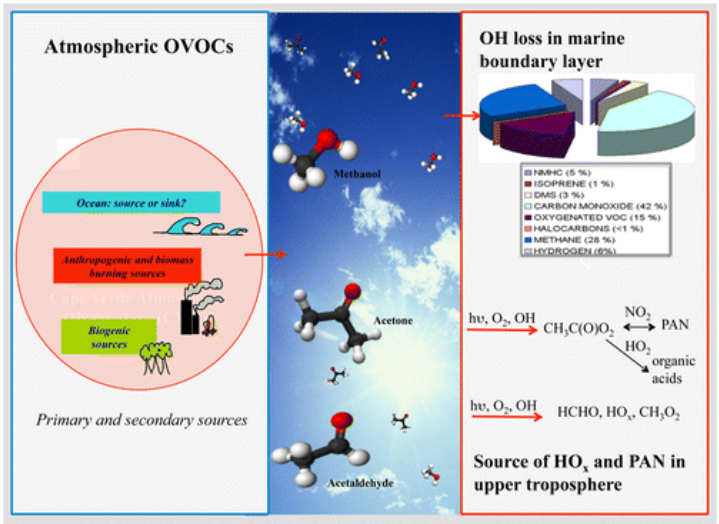

Figure 1. Abstract art from the latest CVAO publication "Multiannual Observations of Acetone, methanol and acetaldehyde in remote tropical Atlantic Air: Implications for atmospheric Oxygenated VOCs budgets and oxidative capacity" Environ. Sci. Technol., 2012, 46 (20) pp11028-11039.