Supplementary material

Measurement and modelling of reactive halogen species over the tropical Atlantic Ocean

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Figure S1: Location of the measurement site at São Vicente, Cape Verde. The DOAS light path was 6 km long (total 12 km) and is indicated on the island of São Vicente. The coastline was generated using the Coastline Extractor page hosted by the National Oceanic and Atmospheric Administration (NOAA)/National Geophysical Data Center, Marine Geology and Geophysics Division.



Figure S2: Eddy diffusion coefficient (K_z) profile considered for modelling halogen chemistry at Cape Verde. A capped boundary layer is constructed using the wind speed measurements from São Vicente.



Figure S3: Predicted profiles of CH₂I₂, CH₂IBr, CH₂ICl and CH₃I at Cape Verde using halocarbon flux measurements (Jones et al, 2009) as constraints. The short lived photolabile iodocarbons (e.g. CH₂I₂ and CH₂IBr) show a strong diurnal trend with higher values seen during the night time. The longer lived species are better mixed in the BL (e.g. CH₃I).



Figure S4: Diurnal profile of extra I_2 flux used in THAMO to get the best fit to IO observations at Cape Verde.