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0.1 Reactive gas measurements at the Cape Verde Atmospheric Observatory

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The tropical marine boundary layer acts as an engine room for the self-cleansing of the Earth's atmosphere, a result of high solar radiation and an abundance of water vapour and ozone. It is in these regions that the effects of certain greenhouse gases may be acutely influenced, since the oxidation chemistry occurring is potent in controlling the lifetime and hence concentrations of gases such as methane and ozone. Atmospheric observations in tropical regions are however sparse and there is little observational constraint on the tropical oxidative capacity and how this varies seasonally. A new ocean-atmosphere observatory on the Cape Verde archipelago (16.8˚N, 24.9˚W) in the eastern tropical Atlantic Ocean will help provide such information and critical knowledge on the processes involved. Measurements of reactive gases including ozone, carbon monoxide, nitrogen oxides, volatile organic compounds, oxygenated volatile organic compounds, dimethyl sulfide, halogen oxides and meteorological data were initiated in October 2006 and basic data are already online at www.york.ac.uk/capeverde. Chemical speciation and physical characterisation of aerosols, and concentrations of halocarbons and greenhouse gases (including carbon dioxide, methane and nitrous oxide) will be monitored in 2007 by collaborators at the Max-Planck-Institut für Biogeochemie, Jena, Germany (MPIB Jena) and the Leibniz-Institut für Troposphärenforschung, Leipzig, Germany (IfT). The observatory has achieved recognition by the World Meteorological Organisation (Global Atmospheric Watch), filling a key gap between Mauna Loa (20˚N) and Paramaribo (6˚N) in the tropical latitudinal band. Ad-

ditional ocean monitoring activities, to be developed in 2007, will include automatic measuring devices in deep water 50 kilometres off-shore. This presentation describes the first 6 months of data from the atmospheric observatory and the key scientific questions we aim to address.