



Comparison of ground-based observations and model calculations of stratospheric bromine monoxide above Nairobi (1°S, 36°E)

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Bromine species have discovered to play an important role in ozone depletion in the stratosphere. Stratospheric inorganic bromine was estimated in 1999 to be 18-21 ppt from organic precursor measurements and from coincident measurements of bromine monoxide (BrO). Its contribution to total stratospheric ozone loss is estimated at about 25%. In contrast to chlorine concentrations which have stabilized as a result of the Montreal Protocol, the maximum of bromine source gas emissions have not yet reached. Measurements of BrO are reported in various studies for high and middle latitudes but there are no long term and only a few campaign measurements in low latitude regions and in particular in Africa. To extend our current understanding of bromine chemistry first systematic ground based measurements of stratospheric BrO at low latitudes over a period of several years are presented. The measurements are compared with calculations of BrO slant column densities from a 1D chemical transport model (CTM) which is coupled with a radiative transfer model to allow direct comparisons between the observed and modelled data.