

Global Atmosphere Watch Activities in Kenya and Characteristics of Some of the Gas Species

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Kenya serves as host to Mt. Kenya Global Atmosphere Watch Station (MKN), which is complemented by the Nairobi Ozonesonde Station. In this study, the characteristics of ozone data from both stations and carbon monoxide and volatile organic compounds data from MKN were investigated. At MKN, Ozone (O_3) and Carbon Monoxide (CO) show strong diurnal variability due to dynamic processes. There are strong seasonal variations of O_3 and CO due to seasonal variation in advection of depleted marine air. O_3 concentrations tend to be more from May to September and lowest in November. Low CO occurs in April-May and November but have high peaks in February and July. These O_3 and CO variations are due to monsoon transport and mountain venting. Volatile organic compounds show almost a similar annual cycle, having minimum values during the months of April and May and maximum values are varying (e.g. for ethane being December and January, butane July and August, and Pentane June). In Nairobi, ozonesondes show that minimum vertical ozone occurs at 16Km and maximum values occur at 26Km (asl). Total column ozone has maximum values in September and minimum values in March.

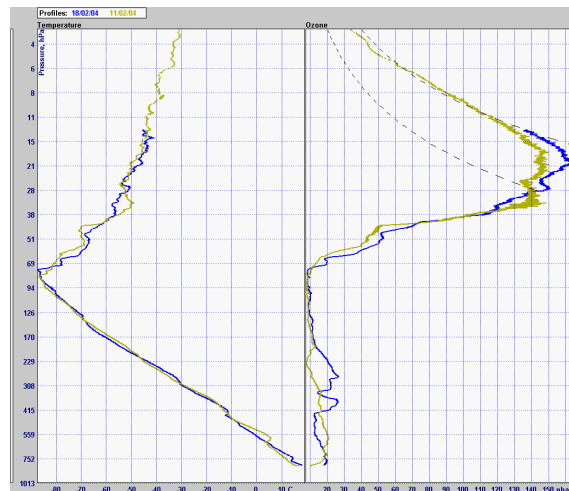


Figure 1. Nairobi vertical ozone profile.

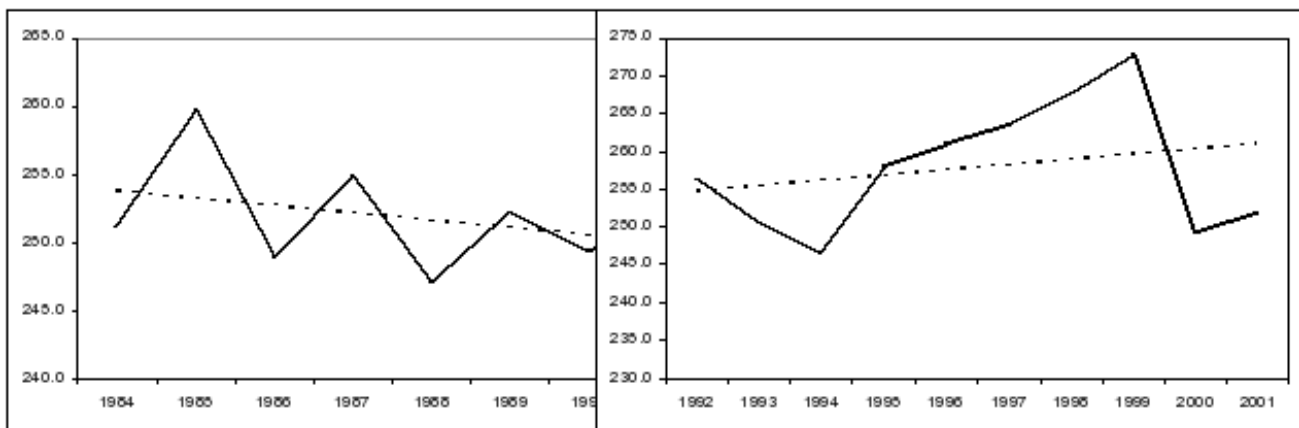


Figure 2. Nairobi total column ozone trend.