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## An overview of two years of ozone radio soundings over Cotonou as part of AMMA

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**Abstract.** As part of the African Monsoon Multidisciplinary Analysis (AMMA) program, a total of 98 ozone vertical profiles over Cotonou, Benin, have been measured during a 26 month period (December 2004– January 2007). These regular measurements broadly document the seasonal and interannual variability of ozone in both the troposphere and the lower stratosphere over West Africa for the first time. This data set is complementary to the MOZAIC observations made from Lagos between 0 and 12 km during the period 1998– 2004. Both data sets highlight the unique way in which West Africa is impacted by two biomass burning seasons: in December– February (dry season) due to burning in the Sahelian band and in June– August (wet season) due to burning in southern Africa. High interannual variabilities between Cotonou and Lagos data sets and within each data set are observed and are found to be a major characteristic of this region. In particular, the dry and wet seasons are discussed in order to set the data of the Special Observing Periods (SOPs) into a climatological context. Compared to other dry and wet seasons, the 2006 dry and wet season campaigns took place in rather high ozone environments. During the sampled wet seasons, southern intrusions of biomass burning were particularly frequent with concentrations up to 120 ppbv of ozone in the lower troposphere. An insight into the ozone distribution in the upper troposphere and the lower stratosphere (up to 26 km) is given. The first tropospheric columns of ozone based on in-situ data over West Africa are assessed. They compare well with satellite products on seasonal and interannual time-scales, provided that the layer below 850 hPa where the remote instrument is less sensitive to ozone, is removed.

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