

Determining the sources of high ozone during the 2017 LASIC field campaign using HYSPLIT modeling

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Abstract

High ozone (O₃) concentration near the surface can provoke health issue principally affected the pulmonary system. The ozone presence above of the tropopause is safe because protect us from sun radiation. Due to the industries and vehicles, the presence of ozone is more common in the larger cities. Other places like South Atlantic have highest ozone level, but the principal source is by biomass burning and lightning. The principal focus of this study is can be detected where ozone come from, if it has come from South America or Central Africa, at the same time identify the ozone altitude in the atmosphere. Using the HYSPLIT model can identify where ozone come from both horizontally like vertical, and what is the ozone source. Also, use weather satellite image to detect rain, thunderstorm, and fire over South America and Central Africa. During the months of August and September the ozone detected in the lower troposphere come from to the South Atlantic. The ozone in the middle troposphere was located in the South Atlantic and Central Africa. The lower ozone peaks values are related with the South Atlantic because the air in this region or the air come from the South Atlantic for its low concentration this ozone is good. High or above high ozone concentrations detected during August and September come from Central Africa principally. Ozone found in the upper troposphere is related with lightning because that ozone peak detected is at the same altitude where was produced. This ozone peaks came from Central Africa and South Atlantic principally.