



Model simulations of atmospheric oxidation and chemical species transports over West Africa

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A global 3-dimension chemical transport model, p-TOMCAT, driven by ECMWF re-analysis data, was used to study the atmospheric oxidation and chemical transport in both vertical and horizontal directions. The model contains a detailed isoprene and bromine chemistries, together with some chlorine and iodine organic halogens such as TCE. Simulation is mainly focused on August when dense flight-measurements can be used for comparison. It is found that the model can reproduce main features of long-lived species such as CO and O₃ in both vertical and horizontal direction. Organic species, isoprene and HCHO, are well simulated with the isoprene chemistry. The model can also catch some deep convection effects on the species vertical distributions. However the biomass burnings are not well considered in the model and the urban scale plume also can not be represented considering the coarse resolution used (2.8 degree) and also coarse emission source in a 3D global model.