



## **Origin, extend and health impacts of air pollution in Sub-Saharan Africa**

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Southern Africa produces about a third of the Earth's biomass burning aerosol particles, yet the fate of these particles, their origin, chemical composition and their influence on regional and global climate is poorly understood. These research questions motivated the NASA field campaign ORACLES (ObseRvations of Aerosols above CLouds and their intEractionS). ORACLES is a five year investigation with three Intensive Observation Periods (IOP) designed to study key processes that determine the climate impacts of African biomass burning aerosols. The first IOP has been carried out in 2016. The main focus of the field campaign are aerosol-cloud interactions, however in our first study related to this area we will investigate the aerosol plume itself, its origin, extend and its resulting health impacts.

Here we will discuss results using the global mesoscale model NASA GEOS-5 in conjunction with the NASA GISS-E2 climate model to investigate climate and health impacts that are directly related to the anthropogenic fire activities in Sub-Saharan Africa. Focus will be on the SH winter seasons biomass burning events, its contribution to Sub-Saharan air pollution in relationship to other air-pollution sources and its resulting premature mortality.