



The MOYA aircraft campaign: first results interpreting West African biomass burning emissions using the UK FAAM aircraft

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Global methane concentrations continue to rise due to an imbalance between sources and sinks. There remains little consensus on the relative components of the manifold source types and their geographical origin. The Global Methane Budget and Yearly Assessments (MOYA) project is tasked with better characterising the global methane budget through an augmented global measurement and modelling programme.

As part of MOYA the UK's Facility for Airborne Atmospheric Measurement (FAAM) conducted a campaign in late February 2017 focussing on the biomass burning season in West Africa. Here we report first results from the aircraft data gathered in the Senegal region and present the plan for a future detachment to Uganda in January 2019. We show results of sampling the methane-carbon-isotopic and chemical nature of both a near-field biomass burning plume (directly overhead) and in regionally-polluted far-field aggregated biomass plumes (measured offshore of Senegal). Specifically, tracer-tracer correlations and mixing lines illustrate the chemical processing and serve to tag air masses to characterise fingerprinted emission sources in the area. Together, these campaigns aim to better quantify source signatures of biomass burning and tropical wetland emissions in the context of the global methane budget through analysis of co-emitted tracers and isotopic composition.