



The MOYA aircraft campaign: First measurements of methane, ethane and C-13 isotopes from West African biomass burning and other regional sources 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), will fly four campaigns based out of West Africa and Ascension Island in the period 2017-2019, to focus on the important role of tropical sources. The first of these, to be conducted in late February 2017, will focus on the biomass burning season in West Africa. This paper will present the plan for future FAAM MOYA campaigns and report on our first aircraft data gathered in the West African region. The new addition of an interband cascade laser spectrometer to the FAAM aircraft, flown in this campaign for the first time, promises to provide the first real-time, continuous, and simultaneous, airborne measurements of methane, ethane and methane C-13 isotopologues. Together, these measurements, when interpreted in combination with other trace gases and aerosol measured on the aircraft, will serve as case studies to inform modelling of regional and global fluxes through their isotopic fingerprints.