



Aircraft simultaneous measurements of NO₂, total peroxy nitrate, total alkyl nitrate, and HNO₃: observations and main results from UK, Boreal forest and Central Italy

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A four-channel thermal dissociation laser induced fluorescence (TD-LIF) instrument for simultaneous measurements of nitrogen dioxide (NO₂), total peroxy nitrate, total alkyl nitrate and nitric acid, was installed three years ago on the UK Facility for Airborne Atmospheric Measurements (FAAM) BAe 146-301 atmospheric research aircraft. Since summer 2010 the TD-LIF has successfully flown in five field campaigns: RONOCO I (summer 2010, UK), SeptEx (summer 2010, UK), RONOCO II (winter 2011, UK), BORTAS (summer 2012, Canada) and SONATA (summer 2012, Italy). In this presentation will be show the main characteristics of the TD-LIF and the observations collected during the five campaigns above. The main results achieved in each campaign will be reported and emphasis will be given to the role of NO_x, total peroxy and total alkyl nitrates in the different environments observed to date.