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Biogenic VOC measurements during the Oxidant and Particle Photochemical Processes (OP3) above a South-East Asian tropical rainforest Campaign

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We present the first ambient air speciated monoterpene measurements from the UK FGAM (Facility for Ground based Atmospheric Measrements) - York dual channel gas chromatograph system with flame ionisation detectors, alongside measurements of other biogenic volatile organic compounds (BVOCs) such as isoprene, which were made during the Oxidant and Particle Photochemical Processes above a South-East Asian tropical rainforest (OP3) campaign in Danum Valley, Borneo, in 2008. The monoterpenes measured were alpha-pinene, camphene, 3-carene, gamma-terpinene and limonene. We compare the relative concentrations and diurnal profiles of the different monoterpene species and other BVOCs such as isoprene, and analyse variability in their concentrations in light of various environmental conditions, in order to gain insight into factors which influence their emission rates, and therefore regulate their potential impact upon photochemical processes within the boundary layer. We also present regional BVOC measurements made onboard the FAAM BAE 146 aircraft over both the natural rainforest and oil palm plantations.