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Measurements of VOC emissions from a boreal fen with a REA system

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Fluxes of Biogenic Volatile Organic Compounds (BVOC) were measured at an open fen (Siikaneva) in Southern Finland. Vegetation on the fen is dominated by *Sphagnum* mosses and sedges.

A Relaxed Eddy Accumulation (REA) system with dynamic dead band was designed and constructed for measurements. Samples of updraft and downdraft air were collected in separate Tedlar-bags during half hour sampling period according to vertical wind velocity. Afterwards the samples were pumped into previously evacuated stainless steel canisters for non-methane hydrocarbon analysis and plastic syringes for methane analysis. Methane, C_2-C_5 hydrocarbons and some halogenated hydrocarbons were analysed by gas chromatographs with FID and ECD.

A significant flux of isoprene and methane was detected during growing season. Fluxes of other light hydrocarbons were below detection limit. Isoprene emissions from vegetation were light and temperature dependent as described by Guenther algorithm. Average standard emission potential for whole measurement period was 620 μg m^{-2} h^{-1}. This value is in good agreement with values found in literature.