



## **Full mass spectrum analysis of airborne PTR-MS measurements in the Arctic atmosphere during Spring 2018**

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During the PAMARCMIP campaign (March 10 to April 8, 2018) a PTR-MS instrument was operated during 13 research flights from Station Nord (81°43'N, 17°47'W), Greenland, on board of the POLAR 5 aircraft. We will present first data from a full mass spectrum analysis revealing approximately 50 compounds (hydrocarbons, oxygenated organics, halogenated organics, peroxy-nitrates and dimethyl sulfide) with periods above the limit of detection (LOD), which was typically 5-50 pmol/mol and mostly limited by instrumental contamination. The highest mixing ratios of ~1500 and 300 pmol/mol were detected for acetone and methylethylketone, respectively. Benzene, toluene, and acetonitrile are combustion tracers for fossil fuel (only benzene and toluene) and biomass burning. Typical background mixing ratios in the Arctic atmosphere were 100, 20, and 50 pmol/mol, respectively. The low ratio benzene/toluene indicated the absence of fresh pollution, except during a few plume encounters. Surprisingly high levels of isoprene up to 150 pmol/mol indicated biogenic activity. In this presentation we will discuss the sources, sinks, transport and reactivity of the observed organics in the Arctic atmosphere.