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# Observations of ozone, polar stratospheric clouds and stratospheric water vapor in Sodankylä

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During the recent polar ozone campaigns we have made a series of in situ observations of the vertical profiles of ozone, polar stratospheric clouds (PSCs) and stratospheric water vapor at Sodankylä in northern Finland (67.4° N, 26.6° E). The water vapor measurements were made by the CFH cryogenic frost point hygrometers and the FLASH-B Lyman-alpha hygrosondes. These instruments provided data on the actual water vapor distribution in the polar stratospheric vortex and in the vicinity of the vortex in the lower stratosphere and contributed to the understanding of the processes affecting the fine-scale distribution of water vapor. The aerosol backscatter soundings were used to study PSC optical properties and formation processes. Here we first present selected case studies focusing on the observations of the vertical profiles of stratospheric water vapor and PSCs during the International Polar Year, 2007-2008. Secondly, we present the first climatology of inside-vortex water vapor profiles for December to March season based on measurements made at Sodankylä during a longer time period: 2002-2008. Finally, we report the result of ozonesonde measurements from the three recent polar winters.