



## **Winter 2005-2006: A new northern hemisphere record winter with respect to stratospheric temperatures and Polar Stratospheric Cloud formation?**

**G. Hansen** (1), U. Blum (2), M. Gauss (3), R. Kivi (4), E. Kyrö (4), M. Maturilli (5), C. L. Myhre (6), K. Stebel (1), A. Søvde (3)

(1) Norwegian Institute for Air Research, Tromsø, Norway, (2) Norwegian Defence Research Establishment, Kjeller, Norway, (3) University of Oslo, Oslo, Norway, (4) Finnish Meteorological Institute, Sodankylä, Finland, (5) Alfred Wegener Institute for Polar and Marine Research, Potsdam, Germany, (6) Norwegian Institute for Air Research, Kjeller, Norway (ghh@nilu.no / Fax: +47 77750376 / Phone: +47 77750380)

After a record winter in 2004-2005 in terms of PSC extent and ozone depletion in the 18-20 km altitude range, the Arctic stratosphere in winter 2005-2006 again is characterized by extreme conditions, opening for the possibility of severe ozone loss later in the season. During December 2005 and the first part of January 2006, a strong vortex and extremely low temperatures occurred in the Arctic with its centre above Northern Fenno-Scandia and the North Atlantic. The lowest temperatures so far of 182 and 183 K were registered by radiosondes in Sodankylä and the ALOMAR ozone lidar, respectively, in the first week of January, accompanied by massive PSCs in the 22-27 km altitude range. Visually, PSCs were observed daily from December 26, 2005, to January 9, 2006, at Tromsø and other sites in Northern Scandinavia. These observations are very similar to the record observations in winter 1995-1996, which resulted in a total ozone loss of more than 40% in late March. We will present the development of stratospheric temperatures, PSCs, the ozone layer and other relevant parameters as observed in Northern Fenno-Scandia and on Svalbard until end of March 2006, and will combine them with model results, in order to estimate chemical activation and ozone depletion.