Geophysical Research Abstracts
Vol. 14, EGU2012-4382, 2012
EGU General Assembly 2012

Temperature of Polar Stratospheric Clouds formation in the Arctic and Antarctic

J.-P. Pommereau, A. Pazmino, F. Goutail, and A. Garnier
LATMOS, CNRS, Université de Versailles St Quentin, Guyancourt, 78280 France (Jean-Pierre.Pommereau@latmos.ipsl.fr)

Polar Stratospheric Clouds (PSCs) induce a remarkable reddening of the sky at twilight. Such reddening has been observed regularly by the SAOZ UV-visible spectrometers operating in polar regions. The PSC detection is based on a Color Index (CI) derived from the ratio of the sunlight scattered at zenith at 550 to 350 nm. The cloud altitude is retrieved from the SZA (Sun Zenith Angle) of maximum CI, after calibration by comparison with PSCs observations from the CALIPSO lidar in orbit since 2006. The temperature threshold at which PSCs can form is then investigated using the ECMWF model at the cloud level.
We will show statistics based on more than 20 years of observations in Sodankyla in Finland and in Dumont d'Urville in Antarctica. The PSC threshold temperature is found to be lower by about 5K in the Antarctic than in the Arctic, which is shown to be consistent with the expected stronger de-nitrification and dehydration of the southern winter vortex compared to the northern one.