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Validation of PSC predictions with GPS Radio Occultation temperature retrievals.

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The GPS Radio Occultation (GPS-RO) technique provides highly accurate and precise stratospheric temperature profiles with good coverage in the Arctic. These measurements can serve as a complement to balloon borne temperature easurements.

The psc.dmi.dk web page is a service for research and monitoring of the ozone depletion in the Arctic. For several years the web page has presented the ECMWF analysis and forecast of the polar vortex position at various altitude levels, together with the areas where the temperature is lower than the threshold for formation of polar stratospheric clouds (PSC) of type 1 and 2. A ten day temperature forecast is issued daily for a number of ground based measuring stations in the area, facilitating the planning of observations.

With the recent inclusion of near real time GPS RO temperature profiles from the EUMETSAT Metop satellites the monitoring of the state of the stratosphere is further strengthened especially by a higher vertical resolution. We show here the validation of our daily forecast of the station temperatures against the observed GPS RO temperature profiles, and a study on how/where the results from the RO profiles can improve the analysis and forecast of the conditions of the ozone depletion area in the northern stratosphere.