An evaluation of low-level clouds forecast by AMPS-Polar WRF, by J. P. Nicolas and D. H. Bromwich, Polar Meteorology Group, Byrd Polar Research Center, The Ohio State University, Columbus, Ohio, USA.

Cloud conditions are a critical aspect for aircraft operations in Antarctica, especially at McMurdo Station. A previous evaluation of clouds forecasts by AMPS using Polar MM5 (with the Reisner microphysics scheme) showed that AMPS had realistic moisture predictions at levels at and below 500 hPa, but large positive moist biases around 300 hPa. Surprisingly, forecast cloud amounts were too small at low levels, but realistic in the high troposphere. Reconciling these results implies that, for Antarctic conditions, the Reisner scheme produces too little cloud for a given moisture content. The same forecast moisture behavior was found in AMPS using Polar WRF (presented at the AMOMFW 2010), but the cloud biases had not yet been determined. The assessment of AMPS clouds forecasts with the current model configuration is the subject of the presentation. It is based on the study carried out by J. Nicolas during a three-week visit at McMurdo in February 2011. It was found in particular that the AMPS “pseudo-satellite” product exhibits considerably less low clouds than AMPS-Polar MM5.