

Medium-range temperature forecasting for South Pole

Michael Johnson

Airlift missions to and from South Pole Station are limited by temperatures colder than -40°C due to aircraft capabilities and rely on 10-day temperature forecasts provided by SOPP meteorology for planning forecasts. These forecasts incorporate a blend of model guidance from the Antarctic Mesoscale Prediction System and Global Forecast System into a graphical prediction of minimum and maximum temperatures. The forecaster estimates a model bias for each input to account for model performance with the goal of improving accuracy in the medium-range. For the 2017-2018 operating season, 102 forecasts were produced with recent error performance available for bias estimation. Published forecasts can be compared with model forecasts along with relative error performance by day. Ultimately, an enhanced medium-range planning forecast may assist mission planners in airlift scheduling.