Satellite Sounder Data Assimilation for Improving Alaska Region Weather Forecast

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A case study and monthly statistical analysis using AIRS/CRIS sounder data assimilation to improve the Alaska regional weather forecast model are presented. Forecast results for the month of Nov. 2012 are evaluated against point observations in term of three statistical analysis methods. Model Evaluation Tools (MET) is used to pair the forecasts with their relative point observation data. The study reveals that data assimilation can improve the accuracy of weather prediction model, but the improvement is localized and time-dependent. The improvement occur at areas where the AIRS/CRIS observation data are great different with background fields. Data assimilation has greater impact on relative humidity than temperature.