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Assessement of the CPTEC/INPE operational Rapid Refresh data assimilation cycle over South America

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Assessment of the results from a short-range regional prediction system proposed for CPTEC/INPE based on the WRF model and the Gridpoint Statistical Interpolation (GSI) 3DVar scheme are presented in this study. Particular focus is given to the impact of brightness temperatures over critical regions such as the tropics and subtropics over continental South America. CPTEC/INPE is currently testing the Rapid Refresh data assimilation cycle over South America using WRF/ARW given the special interest in providing boundary conditions to operational local radar applications. The current system is set up to run in a 9 km resolution and 42 vertical levels, with a DA cycle intermittent every 6 hours. The conventional dataset used in this study comprise temperature, surface pressure, moisture and zonal/meridional winds. The initial set of radiances being tested are the following: AMSU-A, MHS and HIRS. This observational dataset is first assimilated and 24h forecasts taken after a 2-week DA cycle spin up are evaluated against surface observations and radiosondes.