



Forecasted Precipitation provided by Seasonal Eta Model using different initial and lateral conditions.

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This work investigates and compares the precipitation errors from seasonal climate forecasts using the Eta Model nested in the CPTEC atmospheric general circulation model (AGCM) and the errors using the model nested in the CPTEC coupled ocean-atmosphere general circulation model (CGCM). The Eta Model seasonal hindcasts was run for the years 2001 until 2007. The results are investigated for two seasons: December-January-February (DJF) and June-July-August (JJA), which are the rainy and dry seasons, respectively, over most of South America. The Eta Model was configured with 40-km horizontal resolution and 38 layers, and covers a domain which includes South America, most of Central America and part of Atlantic Ocean. The forecast length time was 4.5 months. The model was carried out using initial and lateral conditions provided by AGCM and CGCM and updated every 6 hours. Anomaly persisted sea surface temperature was daily updated when AGCM conditions was used; for integrations using CGCM conditions the sea surface temperature was updated daily using forecasted sea surface temperature provided by CGCM. Precipitation, latent heat and shortwave radiation fluxes at surface provided by the Eta Model are compared against observations and Reanalysis data. The main objective of this work is to evaluate the precipitation over the Inter-Tropical Convergence Zone (ITCZ). The ITCZ is responsible for the most precipitation over Brazilian Northeast Region during the rainy season DJF. Results indicate overestimated precipitation over the ITCZ region. However, when the conditions from CGCM were used the amount of precipitation forecasted by Eta Model is significantly reduced. In general, the results from Eta Model using CGCM conditions produced smaller errors than using AGCM conditions for rainy and dry seasons.