Features of the El Niño 2015-2016 during the austral spring

Michelle Reboita (1), Heloisa Pereira (1), and Tércio Ambrizzi (2)

(1) Instituto de Recursos Naturais, Universidade Federal de Itajubá, Itajubá, Brazil (reboita@gmail.com), (2) Departamento de Ciências Atmosféricas, Universidade de São Paulo, São Paulo, Brazil (ambrizzi@model.iag.usp.br)

The El Niño-Southern Oscillation (ENSO) is an ocean-atmosphere interaction phenomenon that impacts the South America rainfall. The purpose of this study is to describe the features of the atmospheric circulation and their impacts over South America precipitation during the austral spring (September to November 2015) of the El Niño 2015-2016. This event began in the austral summer of 2015 and extended until austral fall of 2016. The El Niño 2015-2016 event was classified as very strong by the National Oceanic Index (ONI), once it was presented the sea surface temperature (SST) anomalies equal and higher than 2.0 degrees, in some months. Considering a more recent classification of the El Niño types or diversity (Eastern-Pacific or canonical, EP; Central-Pacifc, CP and MIX, when there is contribution from the eastern and central equatorial Pacific), this event can be classified as a MIX type, i.e. the high SST anomalies appear in central and eastern Pacific and in the east side of this ocean the anomalies pattern cover a smaller area than in canonical events. Considering the South Hemisphere and the austral spring, the polar and subtropical jets were more intense than the climatological values. The Walker cells displaced to east and one downward branch contributed to dry conditions over the Northeast of Brazil. On the other hand, the negative anomalies of geopotential height at 1000 hPa over the South Atlantic Ocean near the southeast of South America, the high frequency of extratropical cyclones and the increase of the humidity flux convergence integrated vertically over the southeast of South America contributed to the positive precipitation anomalies in this continental area.