Geophysical Research Abstracts
Vol. 14, EGU2012-962, 2012
EGU General Assembly 2012

Extreme Events in Present Climate Simulated by RegCM3 Downscaling over the South America

M. S. Reboita (1), R. P. da Rocha (2), and C. G. Dias (1)

(1) Natural Resources Institute, Federal University of Itajubá, Itajubá, Brazil (mireboita@gmail.com), (2) Institute of Astronomy, Geophysics and Atmospheric Sciences, University of São Paulo, Brazil (rosmerir@model.iag.usp.br)

Extreme events have been considered as changing in frequency and intensity of extreme weather such as: heat waves, cold waves, storms, floods and droughts. In terms of climate simulations it is important to verify whether the climate models simulate the extreme values of atmospheric variables. Therefore, the purpose of this study is to evaluate the ability of Regional Climate Model – version 3 (RegCM3) in simulating extreme values of daily precipitation and maxima and minimum air temperatures in the present climate (1959-1990) over South America. Moreover, it will be determined the trend of extreme values by season. RegCM3 was nested in two atmospheric general circulation model outputs: Hadley Centre Atmospheric Model - version 3 (HadAM3) and in the Max Planck Institute for Meteorology global model (ECHAM5). The simulations were performed with 50 km of horizontal resolution in a domain covering South America and part of adjacent oceans. The extreme events are being investigated considering the percentiles above 90% and below 10% and they are being compared with daily rainfall analysis from Climate Prediction Center (CPC) and local analysis of air temperature.