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Simulations of Current Climate and Climate Change over the Tropical Americas

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Currently, a bigger effort is being carried out in order to have regional climate modelers worldwide working towards downscaling simulations of the climate projections generated within the 5th Phase of the Coupled Model Intercomparison Project (CMIP5). Involving a number of regional domains, covering all continents, this initiative (the Coordinated Regional Climate Downscaling Experiment - CORDEX) is expected to contribute information to the 5th Assessment Report (AR5) being prepared by the Intergovernmental Panel for Climate Change (IPCC). In this paper, first we verify the ability of a RCM in simulating the characteristics of the current climate over the tropical Americas and second, we use it for dynamical downscaling runs of climate change projections for the future. The regional model is the Regional Atmospheric Modeling System (RAMS), nested into the Hadley Centre Global Environmental Model Version 2 – Earth System (HadGEM2-ES). Results from a “historical run” (1950-2005) as well as simulations of the RCP4.5 and RCP8.5 scenarios over the tropical Americas ("Central America" CORDEX domain) will be presented.