



Detection of soil moisture impact in convective initiation in the central region of Mexico

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Soil moisture is important for understanding hydrological cycle variability in many regions. Local surface heat and moisture fluxes represent a major source of convective rainfall in Mexico during the summer, driven by positive evaporation-precipitation feedback. The effects of soil moisture are directly reflected in the limitation of evapotranspiration, affecting the development of the planetary boundary layer and, therefore, the initiation and intensity of convective precipitation. This study presents preliminary analysis of the role of soil moisture in convective initiations in central Mexico, for which a methodology for the detection of convective initiations similar to Taylor (2015) has been considered. The results show that the moisture fluxes from the surface influence the development of convection favored by mesoscale circulations at low levels. Initiations are more frequent in regions less humid than their surroundings with the very strong signal during the month of September. The knowledge of the soil predisposition to allow the development of deep convection suggests an alternative tool for the prediction of convective rains in Mexico.