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The role of South American humidity in cyclogenesis

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The mean atmospheric circulation over South America is characterized by significant meridional transport of water vapor along the east slope of the Andes. The importance of these fluxes for cyclogenesis in the South Atlantic has been stressed in the last decades. The present study uses an objective storm tracking algorithm to identifying cyclogenesis events and investigates the relationship of these events with the anomalous distribution of moist entropy, through the equivalent potential temperature field. A composite analysis shows that cyclogenesis is triggered by an increase in moist entropy near the eastern Andes slopes, associated with northerly humidity fluxes from the Amazon basin.