

Poster.4: . **Convective-Scale Impacts of Deforestation on Amazonian Rainfall (CIDAR)**

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Abstract

Deforestation in the Amazon has a great impact on the coupling between the land and atmosphere at scales ranging from local to global climate. It may locally outweigh impacts from global climate change and has been identified as a potential trigger for a tipping point. Despite this, the overall effects of deforestation on rainfall remain unknown; land-use change influences rainfall through a combination of storm-scale to continental-scale processes that until recently have been impossible to capture in a single model due to computational expense. Here we present results from convection-permitting (CP) simulations using the Tropical configuration of the Met Office Unified Model. Our domain covers the majority of South America and includes a series of land-use sensitivity runs making use of socioeconomic deforestation scenarios to 2050. The high-resolution (4km), continental-scale simulations present a real opportunity to address the uncertainty in Amazonian water budget within a single model. We will show initial results on the CP representation of local convective storms, mesoscale convective systems and large-scale circulations, and how these are influenced by land-use change; this will include evaluation of the simulated rainfall characteristics at a range of spatial and temporal scales.