

Interactive comment on “Modelling climate change responses in tropical forests: similar productivity estimates across five models, but different mechanisms and responses” by L. Rowland et al.

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Dear authors,

Because review report from the second referee has not been submitted even after one week from the dead line, I am posting this report for substituting it. As authors have already addressed all of my previous comments satisfactorily, this report is a kind of brief summary of the mentioned manuscript.

Using five vegetation models, authors evaluated how ambient temperature and drought conditions affect plant productivity and stomata conductance in the simulations of Amazonian forest. Observation data, which was taken from a published study, was referred

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as a true value for this comparison.

All models agreed that canopy scale plant-productivity reduced under warming and drought conditions, however, this consistency is partly a result of inconsistent responses of LAI and leaf-scale plant productivity; models with less sensitivity to warmer and drier conditions on LAI have higher sensitivity on leaf-scale productivity.

Part of the inconsistent response in LAI across the model can be explained by the different responses in soil-wetness-index and representation of plant dynamics. Part of the diversity in responses leaf-scale plant productivity was explained by stomatal rather than biochemical responses; models substantially differ in the magnitude and temperature response of stomata-conductance, whose change was primary controlled by soil wetness.

As authors stressed, these results clearly indicate how to simulate soil-water stress is essential for forecasting responses of temperature and drought on tropical forests. Given the importance of Amazonian forest for forecasting global carbon-budget and climate under warming and drying trend, this manuscript treats a topic that is needed to be rigorously investigated. I sense this manuscript meets a basic scientific quality. In the manuscript, simulation protocols are well organized, the topic should be within the scope of the GMD, and I believe journal's readers will have interest on this manuscript.

Interactive comment on Geosci. Model Dev. Discuss., 7, 7823, 2014.