Interactive comment on “The influence of internal variability on Earth’s energy balance framework and implications for estimating climate sensitivity” by Andrew E. Dessler et al.

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The main question in my mind is whether GCM’s are skillful for the kind of tropical temperatures (500 hPa) being used here to correlate with energy imbalances.

A recent paper (Zhoa et al 2016) shows that tropical convection sub grid model parameters have a strong influence on model ECS and that there are no obvious constraints to set those parameters. Another shows that diurnal cloudiness errors in models have a significant influence on insolation at the surface. There are also recent papers showing that adding convective aggregation to a model significantly reduces ECS. And yet another showing that some of these changes affect the vertical temperature gradient.
in the tropics.

GCM’s are rather good at predicting Rossby waves. It would seem however that other measures of skill, particularly in the tropics are not as firmly established.