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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Large-Scale Vertical Velocity, Diabatic Heating and Drying Profiles Associated with Seasonal and Diurnal Variations of Convective Systems Observed in the GoAmazon2014/5 Experiment" *by* Shuaiqi Tang et al.

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This is an interesting discussion of two IOPs during Go-Amazon, one in the wet season and the other the dry season; with three cases studies from the wet season of local, coastal and basin scale convection. It is suitable for publication with a little revision. It is written for a 'club' and needs clarity for less specialized readers.

You mention 2014-2015, but the only data you show is from 2014. Figure 1 has a

'potential site'? L93 - see below.

P10. Although equations (1) and (2) are based on historic literature, the units are not well defined here, and Q1, Q2 do not actually have the units of K/hr as in Figure 8. Nor does QR in (1).

I did not find the Q1-Q2 discussion very satisfactory for Figure 8. Do you have an estimate for QR? I thought you had at least surface and TOA? Why did you not show Q1-Q2 for the case studies where the terms are larger, and different from Fig 8? Typically Q1-Q2-QR has been interpreted as the upward transport of moist static energy, h, by moist convection, but you do not discuss this, nor the added complexity of convection within the diurnal cycle.

L314 time-lag... The vertically pointing cloud data are 'point' measurement (L148)? What is the effective spatial resolution of the omega field? Your discussion (L93 on) of spatial field analysis is vague, and gives no sense of the effective spatial and temporal resolution; and how the fields were effectively smoothed to get omega and other terms.

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