

Introduction: Observations and Modeling of the Green Ocean Amazon (GoAmazon2014/5) by S.T. Martin et al.

General Comments

The paper provides an introduction to the GoAmazon study with the intention of having three overview papers follow. The paper is well written and does provide an introduction to the experiment. However, given that this is an Introductory paper, it would benefit by providing a more specific description of the overall scientific goals of this program, as well as or encompassing those more specific of the individual sites/aircraft. What was the purpose of the ground site setup, what were the key measurements and how did they achieve the goals. What specific atmospheric chemistry or physical processes were being investigated? What were the objectives of the aircraft and how were the flights designed to achieve these objectives. This text could be enhanced in the Introduction and in the Experimental design sections. In addition to the scientific goals and experimental design, details on how successful this study was as a whole, as well as specific successes would be useful.

Specific Comments

p. 30182, L. 15 – ‘many additional research groups’ ? What does this mean?

Tables S1-S13 – Some of the instrument names indicate the quantity being measured, but some do not. The table needs another column indicating the measurement quantity.

p. 30184 – is the ‘guest instrumentation’ reflected as University instrumentation in Table S8?

Figs S1 and S2 – I presume the altitudes are masl? I think the label for Fig S2 should be for IOP2?

p. 30184, L. 16-20 – The flight tracks themselves do not indicate the actual location of the plume or how the plume was carried. They only indicate where the aircraft flew. It would be better to have an explanation of the prevailing winds, daily wind pattern and how the aircraft flights were designed to track the Manaus plume downwind (previous studies, radiosondes, forecasts).

p. 30184, L. 21 – How was the plume forecasted? What model? Reference?

p. 30182 – Title should reflect that the section describes both sites and aircraft flight descriptions.

Figure 3 –Lat/longs needed for edges of maps.

Figure 4 – I don’t see this figure as being useful.

Figure 5 – Combine Figure 3 and 5. Consider one figure with 2 maps – Figure 1 + combined Figure 3/5, indicating the zoomed in portion of Figure 1.

p. 30186, L. 27 simulated wind trajectories. Need some more detail including uncertainties on these simulations and text/references describing how these were calculated.

In the Climatology section, I suggest having a discussion about the climatology of the winds/wind patterns. This would support the following discussion in the Section on sources.

p. 30187, L. 9-14 Having high concentrations of these pollutants in a plume is not surprising, however, it's not clear why these results motivated this study.

Figure 6 – lat/long labels needed.

Figure 7. Figure needs to be substantially larger. For the wind and relative humidity plots – since the measurements were taken 4 times/day how were these figures generated? Interpolated somehow? What is the typical boundary layer height?

Figure 8 – axis numbers and legend difficult to read. I find this figure and the labels a bit confusing.

Figures 9 and 10 – For print, figure could be much larger. Lat/long labels needed on figures. These figures could go in supplementary and explained briefly in text that there are more fires in the dry season compared to the wet season.

Figure 11. For print, figure could be much larger. Why is there no colour scale legend? Is this parameter unitless?