

Interactive comment on “Seasonality of isoprenoid emissions from a primary rainforest in central Amazonia” by E. G. Alves et al.

Anonymous Referee #2

Received and published: 10 February 2016

General Comment and Recommendation:

This is a well written study that reports vertical profiles of isoprene, total monoterpene, and total sesquiterpene mixing ratios within and above canopy during the dry, dry-to-wet transition, and wet seasons. The results contained in this report are very useful to the larger community as confirms prior findings such as the seasonality of isoprenoid emissions due to seasonal changes in light, temperature and phenology. Other insights are provided, but overall this study suggests that long-term measurements are needed, especially for improving BVOC model parameterization in forested areas. I strongly support publication in ACP. I only have a few comments for the authors to consider below before full publication is considered:

1.) Page 28878, Lines 25-29: Were total sesquiterpene mixing ratios higher during C12315

nighttime because you could actually see them due to decreased reactions with OH radicals? Please clarify if part of this is possibly due to lower OH radicals or other oxidants (including NO₃) during nighttime? In general, do the authors have a sense of radical budgets at this site, either through prior measurements or box modeling estimates?

2.) Sampling artifacts by PTR-MS: Can the authors comment at all if the isoprene estimates from PTR-MS are influenced by breakdown of multi-functional peroxides at m/z 69? I wonder how much contribution there is to this ion. I know Martin's group has nicely resolved this with ISOPOOH interfering with signals at MACR and MVK. Like the AMS, I do have some newly inspired reservations (from Martin's nice work recently published on this) about our lack understanding of decomposition of oxidized organics in PTR-MS. I think all the authors on this manuscript likely agree this is a concern.

3.) The quality of Figure 1 should be improved. The figure axes are hard to read and actually look blurred on my PDF.

4.) I would also state I had a hard time reading the Tables as well. The text appears too small in my version from the website.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 28867, 2015.