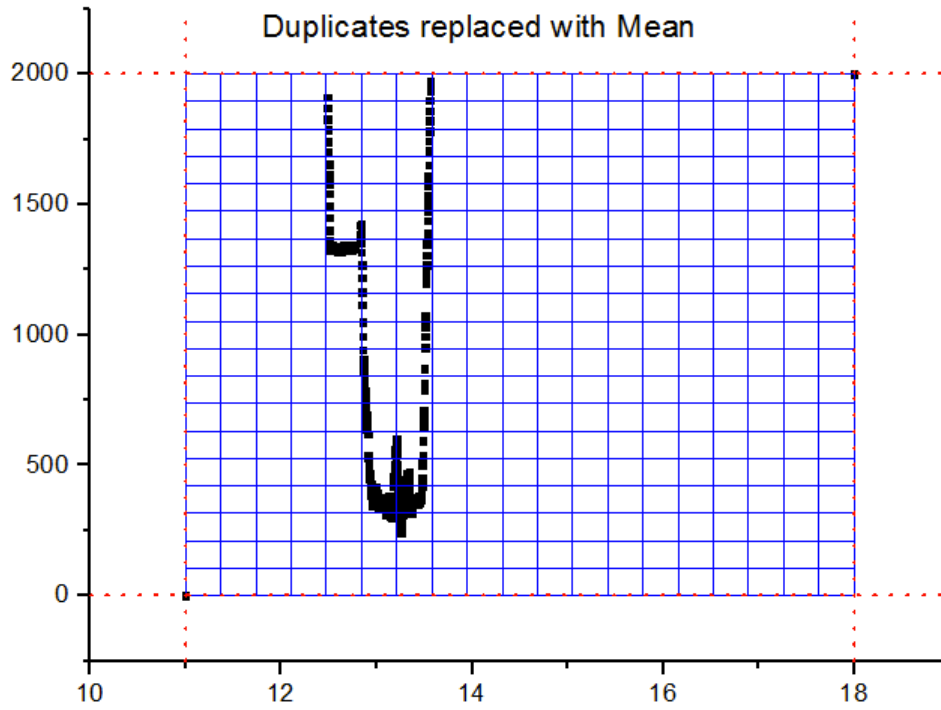


1 **S1.** Interpolation grid used in the Figures 3 and 5.

2



3

4

Figure 1. Interpolation grid (0 - 2000m and 11 - 18h)

5

6

7

8

9

10

11

12 **S2.** The kinetic rate constant measurements for OH + ISOPOOH (1,2- and 4,3- ISOPOOH), at 297 K, is 7.5×10^{-11}
13 $\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$ for (1,2)-ISOPOOH and $1.18 \times 10^{-10} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$ for (4,3)-ISOPOOH (St Clair et al., 2015).
14 The kinetic rate constant of MVK + OH = $1.88 \times 10^{-11} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$ and MACR + OH = $3.35 \times 10^{-11} \text{ cm}^3$
15 $\text{molecule}^{-1} \text{ s}^{-1}$ (Apel, 2002).

16 K_{prod} Average kinetic rate constant = 6.1325×10^{-11}

17 $K_{\text{iso}} - K_{\text{prod}} = (1.1 \times 10^{-10}) - (6.1325 \times 10^{-11}) = 4.8675 \times 10^{-11}$

18

19

20

21

22

23

24

25

26

27

28

29

30

31

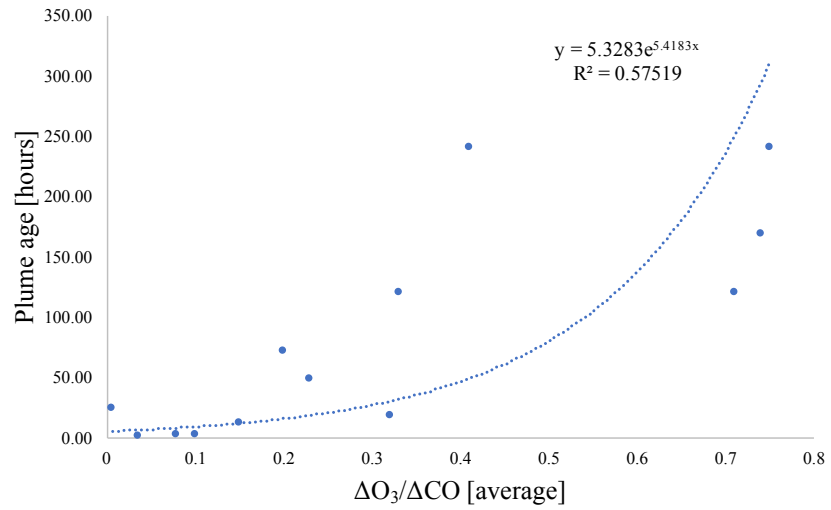
32

33

34

35 S3.

36



37

38

Figure 2. Observations of the ratio $\Delta O_3/\Delta CO$ as a function of plume age in tropical and subtropical sites.

39

40

41

42

43

44

45

46

47

48

49

50

51

52 **S4.**

53 Simulated convective velocity and planetary boundary layer from WRF-Chem in the Forest Management Station ZF-

54 2 (02° 36'S and 60° 12'W), 60 km north of Manaus (Dasa Gu, personal communication, June 2015).

55

56 Table 1. Convective velocity and planetary boundary layer used to calculate OH

57 density following Karl et al. (2007) approach.

Time interval (t)	Convective velocity (W)	PBL (Zi)
<i>h</i>	<i>ms⁻¹</i>	<i>m</i>
11-12	0.58	267
12-13	1.01	462
13-14	1.32	777
14-15	1.40	1075
15-16	1.40	1237
16-17	1.43	1209
17-18	1.31	1124

58

59

60

61

62

63

64

65

66

67

68 **References**

69

70 Apel, E. C. (2002). Measurement and interpretation of isoprene fluxes and isoprene, methacrolein, and methyl vinyl

71 ketone mixing ratios at the PROPHET site during the 1998 Intensive. *Journal of Geophysical Research*,

72 *107*(D3), 1–15. <https://doi.org/10.1029/2000JD000225>

73 St Clair, J. M., Rivera-Rios, J. C., Crounse, J. D., Knap, H. C., Bates, K. H., Teng, A. P., ... Wennberg, P. O.

74 (2015). Kinetics and Products of the Reaction of the First-Generation Isoprene Hydroxy Hydroperoxide

75 (ISOPOOH) with OH. *Journal of Physical Chemistry A*, 150915075517008.

76 <https://doi.org/10.1021/acs.jpca.5b06532>

77