

The following studies contain data useful for updating the supplemental tables and the global averages computed there-in. The actual updates will be delayed until time becomes available, but any user can feel free to incorporate the data themselves if desired. Questions or suggestions for additional studies to consider for updates can be directed to Bob Yokelson at:

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Table S1 (savanna): This table was updated Feb 2015. No further updates are planned now, but on-going work on Australia should prove relevant.

Table S2 (boreal): No updates are planned at this time. Downwind data from the BORTAS campaign is available for a few stable species, but no MCE, etc. Work is in progress analyzing aged smoke from Fort McMurray Fire,

Table S3 (tropical): No update now, but after publication there will be aerosol EF for evergreen tropical forest and cerrado from the SAMMBA campaign: <http://www.atmos-chem-phys-discuss.net/acp-2016-1019/>

Table S4 (temperate): This was updated May 2014. Two new papers are relevant.

1) A new in-press paper by Liu et al., 2017 in JGR will provide for many gases and aerosol species for western US wildfires from the 2013 SEAC⁴RS and BBOP campaigns:

Liu, X., Huey, L. G., Yokelson, R. J., Selimovic, V., Simpson, I. J., Müller, M., Jimenez, J. L., Campuzano-Jost, P., Beyersdorf, A. J., Blake, D. R., Butterfield, Z., Choi, Y., Crounse, J. D., Day, D. A., Diskin, G. S., Dubey, M. K., Fortner, E., Hanisco, T. F., Hu, W., King, L. E., Kleinman, L., Meinardi, S., Mikoviny, T., Onasch, T. B., Palm, B. B., Peischl, J., Pollack, I. B., Ryerson, T. B., Sachse, G. W., Sedlacek, A. J., Shilling, J. E., Springston, S., St. Clair, J. M., Tanner, D. J., Teng, A. P., Wennberg, P. O., Wisthaler, A., and G. M. Wolfe.: Western U.S. wildfires: Emissions and air quality tradeoffs with prescribed burning, in press, J. Geophys. Res., 2016JD026315, 2017. <http://onlinelibrary.wiley.com/doi/10.1002/2016JD026315/full>

2) A paper by Muller et al in ACP provides useful EF for a small prescribed fire:

<http://www.atmos-chem-phys.net/16/3813/2016/>

Table S5 (peat): Three new papers contain major upgrades for EF for Indonesian peat fires.

1) FLAME-4 lab data (Stockwell et al., 2015) <http://www.atmos-chem-phys.net/15/845/2015/>

2) Gases, PM, and aerosol optical properties measured in situ in Borneo in 2015 (Stockwell et al., 2016a) <http://www.atmos-chem-phys.net/16/11711/2016/>

3) More extensive PM data and chemical speciation measured in situ in Borneo to be submitted to ACPD soon: (Jayarathne et al., in prep).

Table S6 (chaparral): FLAME-4 (lab EF for gases, Stockwell et al., 2015): <http://www.atmos-chem-phys.net/15/845/2015/>

Table S7 (open cooking, should rename the table “open wood cooking”): Three updates possible.

1) Wood open cooking in Nepal (Stockwell et al., 2016b) <http://www.atmos-chem-phys.net/16/11043/2016/>

2) FLAME-4 lab (Stockwell et al., 2015): <http://www.atmos-chem-phys.net/15/845/2015/>

3) PM data and chemical speciation measured in situ in Nepal in review in ACPD: (Jayarathne et al., <http://www.atmos-chem-phys-discuss.net/acp-2017-510/>)

Table S8 (rocket stoves): Three updates possible.

1) Nepal (field data, Stockwell et al., 2016b) <http://www.atmos-chem-phys.net/16/11043/2016/>

2) FLAME-4 (lab, Stockwell et al., 2015) <http://www.atmos-chem-phys.net/15/845/2015/>

3) PM data and chemical speciation measured in situ in Nepal in review in ACPD: (Jayarathne et al., <http://www.atmos-chem-phys-discuss.net/acp-2017-510/>)

Table S9 (charcoal making) No new EF studies to our knowledge.

Table S10 (charcoal burning): One new study.

1) Nepal (field data, Stockwell et al 2016b): <http://www.atmos-chem-phys.net/16/11043/2016/>

Table S11 (dung open cook): Two new studies.

1) Nepal (field data, Stockwell et al., 2016b) <http://www.atmos-chem-phys.net/16/11043/2016/>

2) PM data and chemical speciation measured in situ in Nepal in review in ACPD: (Jayarathne et al., <http://www.atmos-chem-phys-discuss.net/acp-2017-510/>)

Table S12 (pasture maintenance) No new EF studies to our knowledge.

Table S13 (crop residue): Four possible updates.

1) FLAME-4 (lab data, Stockwell et al., 2015) <http://www.atmos-chem-phys.net/15/845/2015/>

2) US field measurements on NASA-DC-8 (Liu et al., 2016) Agricultural fires in the southeastern US during SEAC⁴RS: Emissions of trace gases and particles and evolution of ozone, reactive nitrogen, and organic aerosol, J. Geophys. Res., 121, 7383-7414, doi:10.1002/2016JD025040, 2016.

<http://onlinelibrary.wiley.com/doi/10.1002/2016JD025040/abstract>

3) Nepal field measurements (Stockwell et al., 2016b): <http://www.atmos-chem-phys.net/16/11043/2016/>

4) The Mexican crop residue burning EF from Yokelson et al. (2011) should be normalized to lower %C values (~40%) closer to new literature average %C for this fuel type.

Table S14 (garbage burning): Two possible updates:

1) Gases, PM, and aerosol optical properties measured in situ in Nepal in 2015 (Stockwell et al., 2016b): <http://www.atmos-chem-phys.net/16/11043/2016/>

2) PM data and chemical speciation measured in situ in Nepal in review in ACPD: (Jayarathne et al., <http://www.atmos-chem-phys-discuss.net/acp-2017-510/>