

Supplement of
**Seasonal isoprene emission estimates over tropical South America
inferred from satellite observations of formaldehyde and isoprene**

Sun et al.

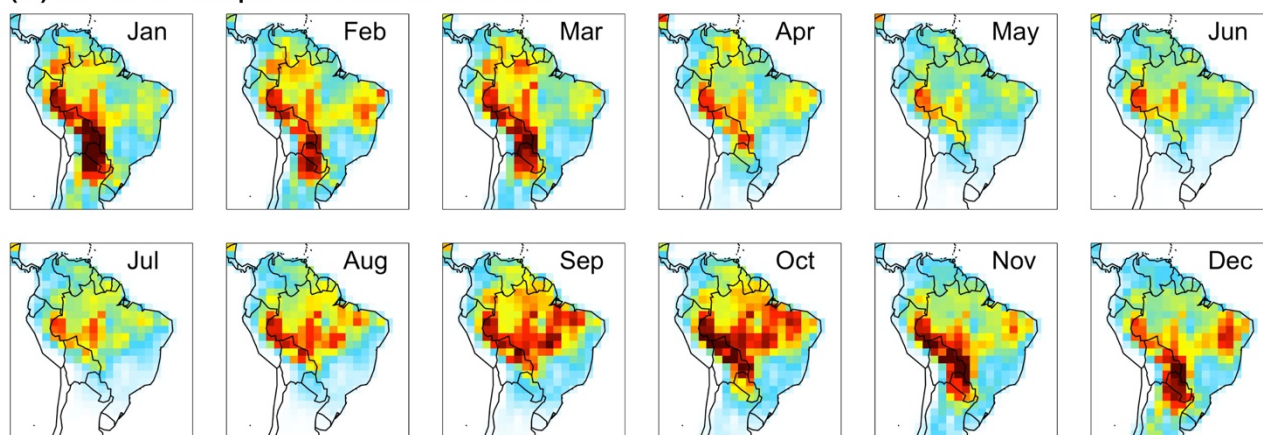
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10 **Table S1:** Monthly normalized mean biases (NMB), normalized mean error (NME), and the Pearson correlation coefficients (R) between GEOS-Chem simulated HCHO columns and TROPOMI HCHO columns for year 2019. For all the correlation coefficients here p-value < 0.05.

Isoprene emission input		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MEGAN 2.1	NMB (%)	44	47	27	51	73	59	45	21	11	21	26	58
	NME (%)	49	54	41	62	80	69	57	34	24	30	35	62
	R	0.78	0.71	0.72	0.62	0.61	0.65	0.71	0.90	0.92	0.82	0.72	0.66
CrIS inferred	NMB (%)	32	30	19	41	65	65	54	21	3	−4	11	25
	NME (%)	40	41	35	54	74	72	60	29	21	24	30	38
	R	0.48	0.71	0.75	0.64	0.54	0.69	0.78	0.92	0.91	0.82	0.69	0.72

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(a) MEGAN isoprene emission rates



(b) TROPOMI HCHO inferred isoprene emission rates

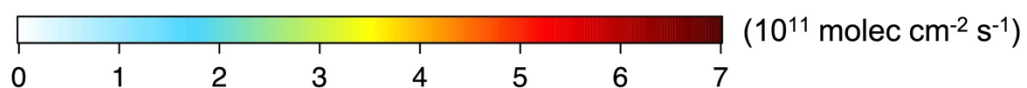
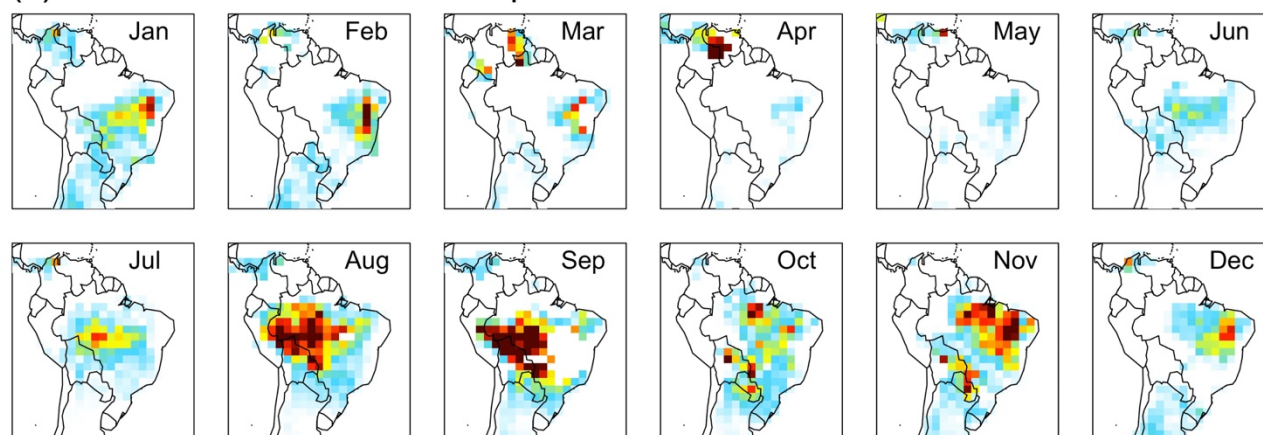


Figure S1: Monthly mean (a) MEGAN and (b) TROPOMI HCHO derived isoprene emission rates (10¹¹ molec cm⁻² s⁻¹) across tropical South America for 2019.

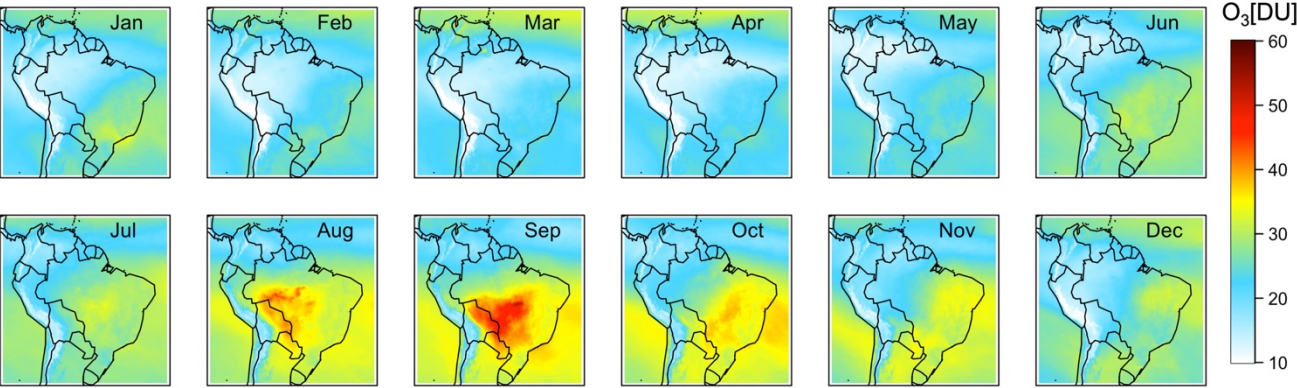
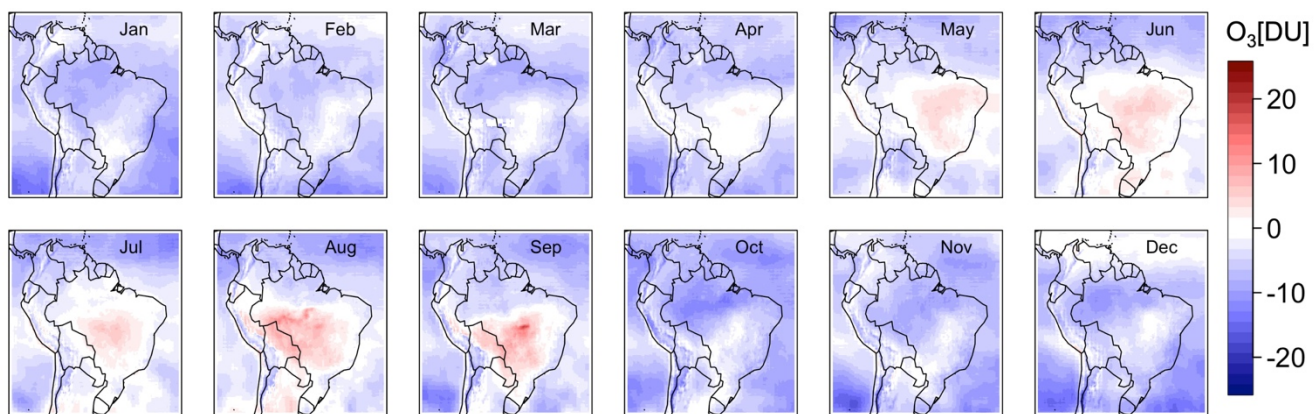


Figure S2: Monthly GEOS-Chem simulated tropospheric ozone columns using isoprene emission estimates inferred from CrIS for 2019.



45 **Figure S3:** Differences between GEOS-Chem tropospheric ozone simulated with CrIS derived isoprene emissions and satellite observed tropospheric ozone (OMI) for year 2019.