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Supplement of

Enhanced summertime ozone and SOA from biogenic volatile organic compound (BVOC) emissions due to vegetation biomass variability during 1981–2018 in China

Jing Cao et al.

Correspondence to: Lingyu Li (lilingyu@qdu.edu.cn)

Table S1. Verification statistics of meteorology and air quality simulations.

Variable	Year	Mean		MB	MAE	RMSE
		Observation	Simulation			
T2 (K)	2008	295.84	295.48	0.36	2.47	3.30
	2018	295.83	294.60	1.24	2.46	3.30
MDA8 O_3 (ppb)	2018	58.83	36.39	22.44	36.65	45.42
$PM_{2.5}$ ($\mu g\ m^{-3}$)	2018	29.29	29.81	-2.71	21.31	30.51

T2: temperature at 2 m; MB: mean bias; MAE: mean absolute error; RMSE: root mean square error.

Table S2. WRF-Chem configuration.

Parameter	Option
Microphysics	Purdue Lin et al. scheme
Long-wave radiation	RRTM scheme
Short-wave radiation	Goddard shortwave scheme
Surface layer	Monin-Obukhov theory
Land surface	Noah Land Surface Model
Cumulus parameter	Grell-Devenyi Ensemble scheme
Planetary Boundary Layer	YSU scheme
Gas phase chemistry scheme	NOAA/ESRL RACM
Aerosol chemistry scheme	VBS
Photolysis scheme	Fast-J

Table S3. Detailed descriptions of the flux measurements used in this study.

Site	Location	Isoprene		Monoterpene		Sesquiterpene		References
		Obs	Sim	Obs	Sim	Obs	Sim	
Qianyanzhou	26°44′48″N, 115°04′13″E	0.07	3.25	0.81	0.17	0.01	0.06	Bai et al. (2017)
Taihuyuan	30°18′N, 119°34′E	3.35	7.06	0.01	0.14	0.00	0.02	Bai et al. (2016)
Changbai Mountain	42°240′N, 128°60′E	0.95	4.03	0.14	0.72	0.19	0.05	Bai et al. (2015)

Obs: observation; Sim: simulation; the units of flux measurements are mg m^{-2} h^{-1}.

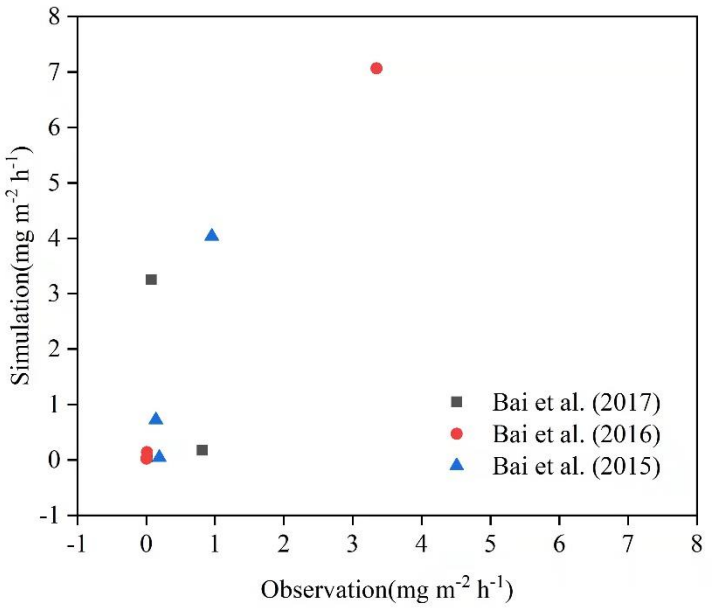

Fig. S1. Comparison of MEGAN model simulations with flux measurements in China.

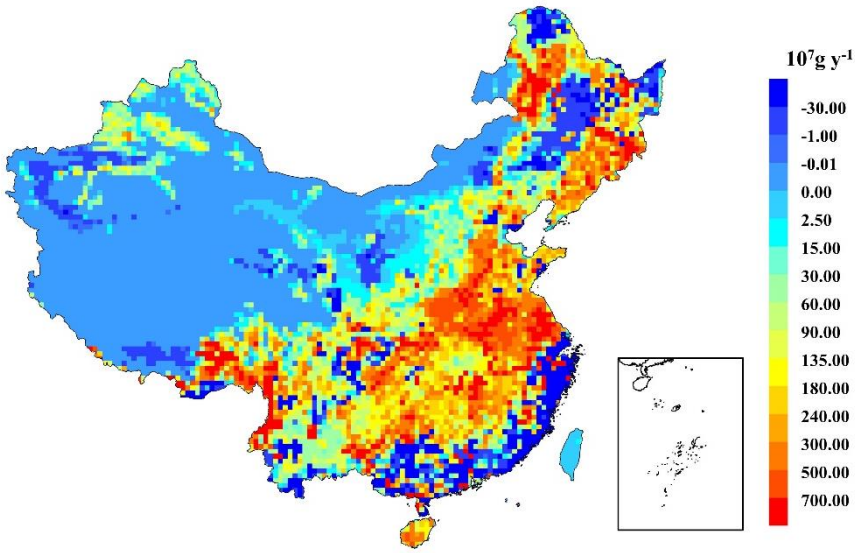

Fig. S2. Spatial distribution of interannual variations in leaf biomass.