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Development and evaluation of the interactive Model for Air Pollution and Land Ecosystems (iMAPLE) version 1.0

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Tabel S1. Descriptions of all parameters used in this study

Parameters	Descriptions	Units
P	Surface precipitation	Kg m^{-2} s^{-1}
ET	Evapotranspiration	Kg m^{-2} s^{-1}
$\triangle TWS$	Terrestrial water storage change	Kg m^{-2} s^{-1}
TRA	Plant transpiration	Kg m^{-2} s^{-1}
$ECAN$	Canopy evaporation	Kg m^{-2} s^{-1}
$EGRO$	Ground evaporation	Kg m^{-2} s^{-1}
C_{tra}	Transpiration conductance	m s^{-1}
$C_{canopy,evap}$	Latent heat conductance at the canopy	m s^{-1}
$C_{ground,evap}$	Coefficient for latent heat at the ground	J kg^{-1}
$runoff$	The total runoff	Kg m^{-2} s^{-1}
R_{srf}	Surface runoff	Kg m^{-2} s^{-1}
R_{sub}	Subsurface runoff	Kg m^{-2} s^{-1}
$Q_{soil,srf}$	Incident water in the soil surface	Kg m^{-2} s^{-1}
$Q_{soil,in}$	The infiltration water into the soil	Kg m^{-2} s^{-1}
α_{slope}	Terrain slope index as 0.1	Unitless
K_4	Hydraulic conductivity	Kg m^{-2} s^{-1}
W_{gw}	groundwater storage	Kg m^{-2} s^{-1}
W_{snow}	Soil water content	Kg m^{-2} s^{-1}
W_{soil}	Snow water equivalent	Kg m^{-2} s^{-1}
ρ_{wat}	Water density as 1000 kg m^{-3}	Kg m^{-3}
T_s	Soil temperature	K
K_T	Soil specific heat capacity	J kg^{-1} K^{-1}
W_{lip}	Water content on soil water	m
C_{lip}	Heat capacity on soil water	J m^{-3} K^{-1}
W_{ice}	Water content on soil ice	m
C_{ice}	Heat capacity on soil ice	J m^{-3} K^{-1}
N_{fire}	Fire count	Number s^{-1}
I_A	Anthropogenic ignition rate	Number km^{-2} s^{-1}
I_N	Natural ignition rate	Number km^{-2} s^{-1}
PD	Population density	Number km^{-2}
F_{NS}	Fraction of non-suppressed fires	%
BA_{single}	The burned area of a single fire	Km^2 $number^{-1}$
BA	Burned area	Km^2 s^{-1}
LB	Length-to-breadth ratio	Unitless
HB	Head-to-back ratio	Unitless
UP	Rate of fire spread	Unitless
f_{RH}	Dependence of fire spread on RH	Unitless
f_θ	Dependence of fire spread on root-zone soil moisture	Unitless
EF	Emission factors for different species	Kg km^{-2}
$Emis$	Fire-emitted trace gases and aerosols	Kg s^{-1}
F_{CH4}	The flux of CH_4	mol C m^{-2} s^{-1}

P_{CH4}	Production of CH_4	mol C m^{-2} s^{-1}
O_{CH4}	Oxidation of CH_4	mol C m^{-2} s^{-1}
E_{CH4}	Ebullition of CH_4	mol C m^{-2} s^{-1}
D_{CH4}	Diffusion of CH_4	mol C m^{-2} s^{-1}
A_{CH4}	Aerenchyma of CH_4	mol C m^{-2} s^{-1}
R_h	Heterotrophic respiration	mol C m^{-2} s^{-1}
f_{PH}	Impact factor of pH	Unitless
f_{TS}	Impact factor of soil temperature	Unitless
$f_{wetland}$	Wetland inundation fraction	Unitless
Q_{10}	Temperature sensitivity index	Unitless
D_i	Diffusion coefficient	cm^2 s^{-1}
R_{sand}	Relative content of sand	Unitless
R_{silt}	Relative content of silt	Unitless
R_{clay}	Relative content of clay	Unitless
f_{tort}	Tortuosity coefficient as 0.66	Unitless
S_{poro}	Soil porosity	Unitless
C_0	Reference CO_2 concentration as 288 ppm	ppm
γ_{gd}	Constrained factors as 0.42	Unitless
γ_g	Constrained factors as 0.90	Unitless
F	Ozone damaging ratio	Unitless
a_{PFT}	PFT-specific sensitivity	Unitless
f_{O3}	O_3 stomatal flux	nmol m^{-2} s^{-1}
g_p	Potential stomatal conductance	m s^{-1}
K_{o3}	Conversion factor of leaf resistance as 1.67	Unitless

Table S2. Summary of 201 FLUXNET sites used for model validations

Site	PFT[a]	Start	End	Longitude	Latitude	Country
AR-SLu	DBF	2009	2011	66.46°W	33.465°S	Argentina
AR-Vir	ENF	2009	2012	56.189°W	28.24°S	Argentina
AT-Neu	Grass	2002	2012	11.318°E	47.117°N	Austria
AU-Ade	Shrub	2007	2009	131.118°E	13.077°S	Australia
AU-ASM	ENF	2010	2014	133.249°E	22.283°S	Australia
AU-Cpr	Shrub	2010	2014	140.589°E	34.002°S	Australia
AU-Cum	EBF	2012	2014	150.723°E	33.613°S	Australia
AU-DaP	Grass	2007	2013	131.318°E	14.063°S	Australia
AU-DaS	Shrub	2008	2014	131.388°E	14.159°S	Australia
AU-Dry	Shrub	2008	2014	132.371°E	15.259°S	Australia
AU-Emr	Grass	2011	2013	148.475°E	23.859°S	Australia
AU-Fog	Shrub	2006	2008	131.307°E	12.545°S	Australia
AU-Gin	Shrub	2011	2014	115.714°E	31.376°S	Australia
AU-GWW	Shrub	2013	2014	120.654°E	30.191°S	Australia
AU-How	Shrub	2001	2014	131.152°E	12.494°S	Australia
AU-Lox	DBF	2008	2009	140.655°E	34.47°S	Australia
AU-RDF	Shrub	2011	2013	132.478°E	14.564°S	Australia
AU-Rig	Grass	2011	2014	145.576°E	36.65°S	Australia
AU-Rob	EBF	2014	2014	145.63°E	17.118°S	Australia
AU-Stp	Grass	2008	2014	133.35°E	17.151°S	Australia
AU-TTE	Shrub	2012	2014	133.64°E	22.287°S	Australia
AU-Wac	EBF	2005	2008	145.188°E	37.426°S	Australia
AU-Whr	EBF	2011	2014	145.029°E	36.673°S	Australia
AU-Wom	EBF	2010	2014	144.094°E	37.422°S	Australia
AU-Ync	Grass	2012	2014	146.291°E	34.989°S	Australia
BE-Bra	ENF	1996	2014	4.521°E	51.309°N	Belgium
BE-Lon	Crop	2004	2014	4.746°E	50.552°N	Belgium
BE-Vie	ENF	1996	2014	5.998°E	50.305°N	Belgium
BR-Sa3	EBF	2000	2004	54.971°W	3.018°S	Brazil
CA-Gro	ENF	2003	2014	82.156°W	48.217°N	Canada
CA-Man	ENF	1994	2008	98.481°W	55.88°N	Canada
CA-NS1	ENF	2001	2005	98.484°W	55.879°N	Canada
CA-NS2	ENF	2001	2005	98.525°W	55.906°N	Canada
CA-NS3	ENF	2001	2005	98.382°W	55.912°N	Canada
CA-NS4	ENF	2002	2005	98.381°W	55.914°N	Canada
CA-NS5	ENF	2001	2005	98.485°W	55.863°N	Canada
CA-NS6	Shrub	2001	2005	98.964°W	55.917°N	Canada

CA-NS7	Shrub	2002	2005	99.948°W	56.636°N	Canada
CA-Oas	DBF	1996	2010	106.198°W	53.629°N	Canada
CA-Obs	ENF	1997	2010	105.118°W	53.987°N	Canada
CA-Qfo	ENF	2003	2010	74.342°W	49.693°N	Canada
CA-SF1	ENF	2003	2006	105.818°W	54.485°N	Canada
CA-SF2	ENF	2001	2005	105.878°W	54.254°N	Canada
CA-SF3	Shrub	2001	2006	106.005°W	54.092°N	Canada
CA-TP1	ENF	2002	2014	80.56°W	42.661°N	Canada
CA-TP2	ENF	2002	2007	80.459°W	42.774°N	Canada
CA-TP3	ENF	2002	2014	80.348°W	42.707°N	Canada
CA-TP4	ENF	2002	2014	80.357°W	42.71°N	Canada
CA-TPD	DBF	2012	2014	80.558°W	42.635°N	Canada
CG-Tch	Shrub	2006	2009	11.656°E	4.289°S	Congo
CH-Cha	Grass	2005	2014	8.41°E	47.21°N	Switzerland
CH-Dav	ENF	1997	2014	9.856°E	46.815°N	Switzerland
CH-Fru	Grass	2005	2014	8.538°E	47.116°N	Switzerland
CH-Lae	ENF	2004	2014	8.365°E	47.478°N	Switzerland
CH-Oe1	Grass	2002	2008	7.732°E	47.286°N	Switzerland
CH-Oe2	Crop	2004	2014	7.734°E	47.286°N	Switzerland
CN-Cha	ENF	2003	2005	128.096°E	42.403°N	China
CN-Cng	Grass	2007	2010	123.509°E	44.593°N	China
CN-Dan	Grass	2004	2005	91.066°E	30.498°N	China
CN-Din	EBF	2003	2005	112.536°E	23.173°N	China
CN-Du2	Grass	2006	2008	116.284°E	42.047°N	China
CN-Du3	Grass	2009	2010	116.281°E	42.055°N	China
CN-Ha2	Shrub	2003	2005	101.327°E	37.609°N	China
CN-HaM	Grass	2002	2004	101.18°E	37.37°N	China
CN-Qia	ENF	2003	2005	115.058°E	26.741°N	China
CN-Sw2	Grass	2010	2012	111.897°E	41.79°N	China
CZ-BK1	ENF	2004	2014	18.537°E	49.502°N	Czech Republic
CZ-BK2	Grass	2004	2012	18.543°E	49.494°N	Czech Republic
CZ-wet	Shrub	2006	2014	14.77°E	49.025°N	Czech Republic
DE-Akm	Shrub	2009	2014	13.683°E	53.866°N	Poland
DE-Geb	Crop	2001	2014	10.914°E	51.1°N	Germany
DE-Gri	Grass	2004	2014	13.513°E	50.95°N	Germany
DE-Hai	DBF	2000	2012	10.453°E	51.079°N	Germany
DE-Kli	Crop	2004	2014	13.522°E	50.893°N	Germany
DE-Lkb	ENF	2009	2013	13.305°E	49.1°N	Germany
DE-Lnf	DBF	2002	2012	10.368°E	51.328°N	Germany
DE-Obe	ENF	2008	2014	13.721°E	50.787°N	Germany

DE-RuR	Grass	2011	2014	6.304°E	50.622°N	Germany
DE-RuS	Crop	2011	2014	6.447°E	50.866°N	Germany
DE-Seh	Crop	2007	2010	6.45°E	50.871°N	Germany
DE-SfN	Shrub	2012	2014	11.328°E	47.806°N	Germany
DE-Spw	Shrub	2010	2014	14.034°E	51.892°N	Germany
DE-Tha	ENF	1996	2014	13.565°E	50.962°N	Germany
DE-Zrk	Shrub	2013	2014	12.889°E	53.876°N	Germany
DK-Eng	Grass	2005	2008	12.192°E	55.69°N	Denmark
DK-Fou	Crop	2005	2005	9.587°E	56.484°N	Denmark
DK-NuF	Shrub	2008	2014	51.386°W	64.131°N	Godthab
DK-Sor	DBF	1996	2014	11.645°E	55.486°N	Denmark
DK-ZaF	Shrub	2008	2011	20.555°W	74.481°N	Greenland
DK-ZaH	Grass	2000	2014	20.55°W	74.473°N	Greenland
ES-Amo	Shrub	2007	2012	2.252°W	36.834°N	Spain
ES-LgS	Shrub	2007	2009	2.966°W	37.098°N	Spain
ES-LJu	Shrub	2004	2013	2.752°W	36.927°N	Spain
ES-Ln2	Shrub	2009	2009	3.476°W	36.97°N	Spain
FI-Hyy	ENF	1996	2014	24.295°E	61.847°N	Finland
FI-Jok	Crop	2000	2003	23.514°E	60.899°N	Finland
FI-Let	ENF	2009	2012	23.96°E	60.642°N	Finland
FI-Lom	Shrub	2007	2009	24.209°E	67.997°N	Finland
FI-Sod	ENF	2001	2014	26.638°E	67.362°N	Finland
FR-Fon	DBF	2005	2014	2.78°E	48.476°N	France
FR-Gri	Crop	2004	2014	1.952°E	48.844°N	France
FR-LBr	ENF	1996	2008	0.769°W	44.717°N	France
FR-Pue	EBF	2000	2014	3.596°E	43.741°N	France
GF-Guy	EBF	2004	2014	52.925°W	5.279°N	French Guiana
GH-Ank	EBF	2011	2014	2.694°W	5.268°N	Ghana
IT-BCi	Crop	2004	2014	14.957°E	40.524°N	Italy
IT-CA1	DBF	2011	2014	12.027°E	42.38°N	Italy
IT-CA2	Crop	2011	2014	12.026°E	42.377°N	Italy
IT-CA3	DBF	2011	2014	12.022°E	42.38°N	Italy
IT-Col	DBF	1996	2014	13.588°E	41.849°N	Italy
IT-Cp2	EBF	2012	2014	12.357°E	41.704°N	Italy
IT-Cpz	EBF	1997	2009	12.376°E	41.705°N	Italy
IT-Isp	DBF	2013	2014	8.634°E	45.813°N	Italy
IT-La2	ENF	2000	2002	11.285°E	45.954°N	Italy
IT-Lav	ENF	2003	2014	11.281°E	45.956°N	Italy
IT-MBo	Grass	2003	2013	11.046°E	46.015°N	Italy
IT-Noe	Shrub	2004	2014	8.151°E	40.606°N	Italy

IT-PT1	DBF	2002	2004	9.061°E	45.201°N	Italy
IT-Ren	ENF	1998	2013	11.434°E	46.587°N	Italy
IT-Ro1	DBF	2000	2008	11.93°E	42.408°N	Italy
IT-Ro2	DBF	2002	2012	11.921°E	42.39°N	Italy
IT-SR2	ENF	2013	2014	10.291°E	43.732°N	Italy
IT-SRo	ENF	1999	2012	10.284°E	43.728°N	Italy
IT-Tor	Grass	2008	2014	7.578°E	45.844°N	Italy
JP-MBF	DBF	2003	2005	142.319°E	44.387°N	Japan
JP-SMF	DBF	2002	2006	137.079°E	35.262°N	Japan
MY-PSO	EBF	2003	2009	102.306°E	2.973°N	Malaysia
NL-Hor	Grass	2004	2011	5.071°E	52.24°N	Netherlands
NL-Loo	ENF	1996	2014	5.744°E	52.167°N	Netherlands
NO-Adv	Shrub	2011	2014	15.923°E	78.186°N	Norway
PA-SPn	DBF	2007	2009	79.635°W	9.318°N	Panama
PA-SPs	Grass	2007	2009	79.631°W	9.314°N	Panama
RU-Che	Shrub	2002	2005	161.341°E	68.613°N	Russia
RU-Cok	Shrub	2003	2014	147.494°E	70.829°N	Russia
RU-Fyo	ENF	1998	2014	32.922°E	56.461°N	Russia
RU-Ha1	Grass	2002	2004	90.002°E	54.725°N	Russia
RU-Sam	Grass	2002	2014	126.496°E	72.374°N	Russia
RU-SkP	ENF	2012	2014	129.168°E	62.255°N	Russia
RU-Tks	Grass	2010	2014	128.888°E	71.594°N	Russia
RU-Vrk	Shrub	2008	2008	62.94°E	67.055°N	Russia
SD-Dem	Shrub	2005	2009	30.478°E	13.283°N	Russia
SE-St1	Shrub	2012	2014	19.05°E	68.354°N	Sweden
SN-Dhr	Shrub	2010	2013	15.432°W	15.403°N	Senegal
US-AR1	Grass	2009	2012	99.42°W	36.427°N	USA
US-AR2	Grass	2009	2012	99.598°W	36.636°N	USA
US-ARb	Grass	2005	2006	98.04°W	35.55°N	USA
US-ARc	Grass	2005	2006	98.04°W	35.547°N	USA
US-ARM	Crop	2003	2012	97.489°W	36.606°N	USA
US-Atq	Shrub	2003	2008	157.409°W	70.47°N	USA
US-Blo	ENF	1997	2007	120.633°W	38.895°N	USA
US-CRT	Crop	2011	2013	83.347°W	41.629°N	USA
US-GBT	ENF	1999	2006	106.24°W	41.366°N	USA
US-GLE	ENF	2004	2014	106.24°W	41.367°N	USA
US-Goo	Grass	2002	2006	89.873°W	34.255°N	USA
US-IB2	Grass	2004	2011	88.241°W	41.841°N	USA
US-Ivo	Shrub	2004	2007	155.75°W	68.487°N	USA
US-KS1	ENF	2002	2002	80.671°W	28.458°N	USA

US-KS2	Shrub	2003	2006	80.672°W	28.609°N	USA
US-Lin	Crop	2009	2010	119.842°W	36.357°N	USA
US-Los	Shrub	2000	2014	89.979°W	46.083°N	USA
US-LWW	Grass	1997	1998	97.979°W	34.96°N	USA
US-Me1	ENF	2004	2005	121.5°W	44.579°N	USA
US-Me2	ENF	2002	2014	121.557°W	44.452°N	USA
US-Me3	ENF	2004	2009	121.608°W	44.315°N	USA
US-Me4	ENF	1996	2000	121.622°W	44.499°N	USA
US-Me5	ENF	2000	2002	121.567°W	44.437°N	USA
US-Me6	ENF	2010	2014	121.608°W	44.323°N	USA
US-Myb	Shrub	2010	2014	121.765°W	38.05°N	USA
US-NR1	ENF	1998	2014	105.546°W	40.033°N	USA
US-Oho	DBF	2004	2013	83.844°W	41.555°N	USA
US-ORv	Shrub	2011	2011	83.018°W	40.02°N	USA
US-Prr	ENF	2010	2014	147.488°W	65.124°N	USA
US-SRC	Shrub	2008	2014	110.84°W	31.908°N	USA
US-SRG	Grass	2008	2014	110.828°W	31.789°N	USA
US-SRM	Shrub	2004	2014	110.866°W	31.821°N	USA
US-Sta	Shrub	2005	2009	106.802°W	41.397°N	USA
US-Syv	ENF	2001	2014	89.348°W	46.242°N	USA
US-Ton	Shrub	2001	2014	120.966°W	38.432°N	USA
US-Tw1	Shrub	2012	2014	121.647°W	38.107°N	USA
US-Tw2	Crop	2012	2013	121.643°W	38.105°N	USA
US-Tw3	Crop	2013	2014	121.647°W	38.116°N	USA
US-Tw4	Shrub	2013	2014	121.641°W	38.103°N	USA
US-Twt	Crop	2009	2014	121.653°W	38.109°N	USA
US-UMd	DBF	2007	2014	84.698°W	45.562°N	USA
US-Var	Grass	2000	2014	120.951°W	38.413°N	USA
US-WCr	DBF	1999	2014	90.08°W	45.806°N	USA
US-Whs	Shrub	2007	2014	110.052°W	31.744°N	USA
US-Wi0	ENF	2002	2002	91.081°W	46.619°N	USA
US-Wi1	DBF	2003	2003	91.233°W	46.73°N	USA
US-Wi2	ENF	2003	2003	91.153°W	46.687°N	USA
US-Wi3	DBF	2002	2004	91.099°W	46.635°N	USA
US-Wi4	ENF	2002	2005	91.166°W	46.739°N	USA
US-Wi5	ENF	2004	2004	91.086°W	46.653°N	USA
US-Wi6	Shrub	2002	2003	91.298°W	46.625°N	USA
US-Wi7	Shrub	2005	2005	91.069°W	46.649°N	USA
US-Wi8	DBF	2002	2002	91.252°W	46.722°N	USA
US-Wi9	ENF	2004	2005	91.081°W	46.619°N	USA

US-Wkg	Grass	2004	2014	109.942°W	31.736°N	USA
US-WPT	Shrub	2011	2013	82.996°W	41.465°N	USA
ZA-Kru	Shrub	2000	2013	31.497°E	25.02°S	South Africa
ZM-Mon	DBF	2000	2009	23.253°E	15.438°S	Zambia

[a] The plant functional types (PFT) include evergreen broadleaf forest (EBF, 13 sites), evergreen needleleaf forest (ENF, 57 sites), deciduous broadleaf forest (DBF, 25 sites), Shrub (52 sites), Grass (37 sites), and Crop (17 sites).

Table S3. Summary of 44 FLUXNET-CH4 sites used for model validations

Site	Latitude	Longitude	Period	Min ~ Max ($g[CH_4]m^{-2}yr^{-1}$)
AT-Neu	47.117ºN	11.318ºE	2010-2012	0.17 ~ 0.91
BR-Npw	16.498ºS	56.412ºW	2013-2016	1.30 ~ 88.95
BW-Gum	18.965ºS	22.371ºE	2018	44.69 ~ 176.00
BW-Nxr	19.548ºS	23.179ºE	2018	13.73 ~ 130.46
CA-SCB	61.309ºN	121.298ºW	2014-2017	7.51 ~ 39.08
CA-SCC	61.308ºN	121.299ºW	2013-2016	3.24 ~ 24.22
CH-Cha	47.210ºN	8.410ºE	2012-2016	3.83 ~ 7.37
CH-Dav	46.815ºN	9.856ºE	2016-2017	0.87 ~ 4.91
DE-Dgw	53.151ºN	13.054ºE	2015-2018	0.25 ~ 30.34
FI-Si2	61.837ºN	24.197ºE	2012-2016	2.13 ~ 38.14
FI-Sii	61.833ºN	24.193ºE	2013-2018	3.29 ~ 43.98
IT-Cas	45.07ºN	8.718ºE	2009-2010	1.84 ~ 134.84
JP-BBY	43.323ºN	141.811ºE	2015-2018	6.18 ~ 51.59
JP-Mse	36.054ºN	140.027ºE	2012-2012	1.10 ~ 94.89
JP-SwL	36.047ºN	138.108ºE	2016-2016	63.04 ~ 268.37
KR-CRK	38.201ºN	127.251ºE	2015-2018	4.76 ~ 138.16
MY-MLM	1.454ºN	111.150ºE	2014-2015	6.44 ~ 20.07
NZ-Kop	37.388ºS	175.554ºE	2012-2015	14.63 ~ 37.64
PH-RiF	14.141ºN	121.265ºE	2012-2014	0.97 ~ 42.44
RU-Che	68.613ºN	161.341ºE	2014-2016	1.80 ~ 13.94
RU-Fy2	56.448ºN	32.902ºE	2015-2018	0.92 ~ 23.38
SE-Deg	64.182ºN	19.557ºE	2014-2018	1.35 ~ 37.58
UK-LBT	51.522ºN	0.139ºW	2011-2014	67.08 ~ 99.65
US-Bes	71.281ºN	156.597ºW	2013-2015	0.34 ~ 16.48
US-Bi1	38.099ºN	121.499ºW	2016-2018	0.20 ~ 16.78
US-Bi2	38.109ºN	121.535ºW	2017-2018	0.61 ~ 8.22

US-CRT	41.628ºN	83.347ºW	2011-2012	2.06 ~ 8.95
US-DPW	28.052ºN	81.436ºW	2013-2017	12.49 ~ 165.81
US-Ho1	45.204ºN	68.74ºW	2012-2018	0.02 ~ 0.11
US-Ivo	68.487ºN	155.75ºW	2013-2016	3.34 ~ 17.17
US-MRM	40.816ºN	74.044ºW	2012-2013	0.32 ~ 1.26
US-Myb	38.05ºN	121.765ºW	2010-2018	13.43 ~ 129.49
US-NC4	35.788ºN	75.904ºW	2012-2016	5.45 ~ 82.42
US-NGC	64.862ºN	163.7ºW	2017-2018	2.1 ~ 5.15
US-ORv	40.02ºN	83.018ºW	2011-2015	5.08 ~ 24.98
US-Snd	38.037ºN	121.754ºW	2010-2015	5.47 ~ 10.58
US-Sne	38.037ºN	121.755ºW	2016-2018	7.22 ~ 75.19
US-Srr	38.201ºN	122.026ºW	2014-2017	1.84 ~ 3.85
US-StJ	39.088ºN	75.437ºW	2016-2016	3.55~ 27.39
US-Tw1	38.107ºN	121.647ºW	2011-2018	24.32 ~ 117.87
US-Tw4	38.103ºN	121.641ºW	2013-2018	21.13 ~ 79.45
US-Twt	38.109ºN	121.653ºW	2009-2017	4.14 ~ 48.34
US-Uaf	64.866ºN	147.856ºW	2011-2018	0.51 ~ 2.02
US-WPT	41.465ºN	82.996ºW	2011-2013	4.19 ~ 207.07

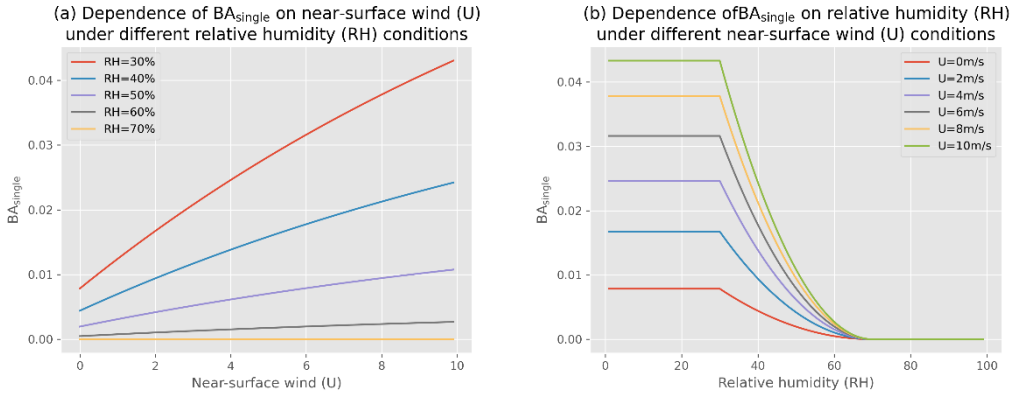

Figure S1. The dependences of BA_{single} on (a) near-surface wind speed (U) and (b) relative humidity (RH), respectively.