Supplement of

Influence of plant ecophysiology on ozone dry deposition: comparing between multiplicative and photosynthesis-based dry deposition schemes and their responses to rising CO₂ level

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In this study, we use four long-term measurement sites with hourly observations:

1. The Harvard Forest Environmental Measurement Site (referred to as Harvard Forest) located in central Massachusetts. We use a $O_3$ EC flux dataset together with ambient $O_3$ concentrations (Munger and Wofsy, 1999) from year 1992 to 2006 to derive $v_d$. Observed ozone flux data was measured at a height of 29m at the EMS site since 1991 (dataset id: HF004). We use air density at 25°C and 1010hPa to compute $v_d$ when temperature measurements are missing. Observed hourly $v_d$ values are removed if they are: (a) from days with more than 30% of missing hourly measurements are removed; (b) not fall within mean ± 3 standard deviations.

2. The Borden Forest Research Station (referred to as Borden Forest) is located in southern Ontario, Canada. We use a database of hourly $v_d$ from year 2008 to 2013 (Wu et al., 2016). $G_s$ was computed using flux data from FLUXNET-Canada Dataset (TEAM, 2016). $v_d$ values were derived with a modified gradient method (MGM) which have been proved to agree well with eddy covariance measurements. Negative $v_d$ values and the same portion of positive $v_d$ values with highest ranking were removed.

3. The Blodgett Ameriflux site (referred to as Blodgett Forest) is located near Georgetown, California, US. The site is dominated by ponderosa pine, characterized by a Mediterranean climate. We use the dataset from Fare et al. (2010), which includes observed $v_d$ and $G_s$ from year 2001 to 2007.

4. The SMEAR II field measurement station (System for Measuring Forest Ecosystem-Atmosphere Relationships II) is located in Hyytiälä Forest, southern Finland. We use quality-checked hourly $O_3$ flux and concentrations for Hyytiälä Forest from year 2007 to 2010. The height of trees near measurement tower was about 14-18m from 2000 to 2010. We use $O_3$ concentrations averaged from measurements at height 33.6m and 16.8m.
**Text S2**

The stomatal resistance parameterization for W89 is calculated as described in Wesely (1989) and Wang et al. (1998). The bulk canopy resistance is represented as:

\[
R_s = r_s \left\{ 1 + \frac{1}{[200(G+0.1)]^2} \right\} \left\{ \frac{400}{(T_s(40-T_s))} \right\} D_i/D_v,
\]

where \( G \) is solar radiation, \( T_s \) is surface air temperature. \( D_i \) and \( D_v \) are molecular diffusivities for water and the pollutant gas respectively.

The stomatal resistance parameterization for Z03 is calculated as described in Zhang et al. (2003) and Zhang et al. (2002). The expressions to calculate stomatal conductance implemented in TEMIR are also represented here.

\[
R_s = 1/[G_s (PAR)f(T)f(VPD)f(\psi)D_i/D_v],
\]

where \( f(T), f(\text{VPD}) \) and \( f(\psi) \) are dimensionless stress functions for temperature (\( T \)), vapor pressure deficit (\( \text{VPD} \)), and water stress (\( \psi \)) respectively as described in Brook et al. (1999). \( G_s (\text{PAR}) \) is the unstressed canopy stomatal conductance. \( G_s \) is calculated as weighted sum of sunlit and shaded leaves.

\[
G_s (\text{LAI}, \text{PAR}) = L_{\text{sun}}/r_s (\text{PAR}_{\text{sun}}) + L_{\text{sha}}/r_s (\text{PAR}_{\text{sha}}). 
\]

\[
r_s (\text{PAR}) = r_{s\text{min}}(1 + b_{rs}/\text{PAR}),
\]

where \( L_{\text{sun}} \) and \( L_{\text{sha}} \) are total sunlit and shaded leaf area index (LAI), \( \text{PAR}_{\text{sun}} \) and \( \text{PAR}_{\text{sha}} \) are absorbed \( \text{PAR} \) averaged over sunlit and shaded leaves, \( r_{s\text{min}} \) and \( b_{rs} \) are minimum stomatal resistance and empirical light response constant for stomatal resistance. The expression for \( \text{PAR}_{\text{sun}} \) and \( \text{PAR}_{\text{sha}} \) as expressed follows. For \( \text{LAI} < 2.5 \) or solar radiation < 200 Wm^{-2}:

\[
\text{PAR}_{\text{sha}} = R_{\text{diff}}e^{-0.5\text{LAI}^{0.7}} + 0.07R_{\text{dir}} \times (1.1 - 0.1\text{LAI})e^{-\cos \theta},
\]

\[
\text{PAR}_{\text{sun}} = \text{PAR}_{\text{sha}} + R_{\text{dir}} \cos \alpha/\cos \theta,
\]

For the other conditions:

\[
\text{PAR}_{\text{sha}} = R_{\text{diff}}e^{-0.5\text{LAI}^{0.8}} + 0.07R_{\text{dir}} \times (1.1 - 0.1\text{LAI})e^{-\cos \theta},
\]

\[
\text{PAR}_{\text{sun}} = \text{PAR}_{\text{sha}} + R_{\text{dir}}^{0.8} \cos \alpha/\cos \theta,
\]

where \( \alpha \) is the angle between the leaf and the sun, \( \theta \) is the solar zenith angle, \( R_{\text{diff}} \) and \( R_{\text{dir}} \) are the downward visible radiation fluxes from diffuse and direct-beam radiation above the canopy.

\[
f(T) = [(T - T_{\text{min}})/(T_{\text{opt}} - T_{\text{min}})] \times [(T_{\text{max}} - T)/(T_{\text{max}} - T_{\text{opt}})]^{bt},
\]

\[
bt = [(T_{\text{max}} - T_{\text{opt}})/(T_{\text{opt}} - T_{\text{min}})],
\]

where \( T_{\text{min}}, T_{\text{max}}, T_{\text{opt}} \) are minimum, maximum and optimum temperature respectively.

\[
f(D) = 1 - b_{\text{vpd}} D,
\]

where \( b_{\text{vpd}} \) and \( D \) are vapour pressure constant and vapour pressure deficit.

\[
f(\psi) = (\psi - \psi_{c2})/(\psi_{c1} - \psi_{c2}),
\]

\[
\psi = -0.72 - 0.0013SR,
\]

3
where $\psi_{c1}$ and $\psi_{c2}$ are parameters that specify leaf water potential dependency, SR is solar radiation.

For the photosynthesis-stomatal conductance module in TEMIR, we follow the description by the Community Land Model 4.5 (CLM4.5) (Oleson et al., 2013). A brief summary is also represented here. Photosynthesis in C3 and C4 plants is computed as follows based on Collatz et al. (1992):

$$A_n = \min(A_c, A_j, A_p) - R_d,$$

The Rubisco-limited photosynthetic rate ($A_c$, $\mu$mol m$^{-2}$s$^{-1}$) is:

$$A_c = \begin{cases} 
V_{\text{cmax}} \frac{c_i - \Gamma_*}{c_i + K_c \left(1 + \frac{\phi}{K_o}\right)} & \text{for C3 plants} \\
V_{\text{cmax}} & \text{for C4 plants}
\end{cases},$$

The RuBP-limited photosynthetic rate ($A_j$, $\mu$mol m$^{-2}$s$^{-1}$) is:

$$A_j = \begin{cases} 
\frac{J \cdot c_i - \Gamma_*}{c_i + 2 \Gamma_*} & \text{for C3 plants} \\
2.3 \times \phi & \text{for C4 plants}
\end{cases},$$

The product-limited photosynthetic rate ($A_p$, $\mu$mol m$^{-2}$s$^{-1}$) is:

$$A_p = \begin{cases} 
3 \times T_p & \text{for C3 plants} \\
k_p \frac{c_i}{P_{\text{atm}}} & \text{for C4 plants}
\end{cases},$$

The dark respiration ($R_d$, $\mu$mol m$^{-2}$s$^{-1}$), which is adjusted by the water stress factor $\beta_t$, is given by:

$$R_d = \begin{cases} 
0.015 \times V_{\text{cmax}} \times \beta_t & \text{for C3 plants} \\
0.025 \times V_{\text{cmax}} \times \beta_t & \text{for C4 plants}
\end{cases},$$

In the equations above, $c_i$ is the intercellular CO$_2$ partial pressure (Pa). $K_c$ and $K_o$ are the Michaelis–Menten constants for carboxylation and oxygenation (Pa). $\phi$ is the intercellular oxygen partial pressure (Pa). $\Gamma_*$ is the CO$_2$ compensation point (Pa). $V_{\text{cmax}}$ is the maximum rate of carboxylation ($\mu$mol m$^{-2}$ s$^{-1}$). $J$ is the electron transport rate ($\mu$mol m$^{-2}$s$^{-1}$). $T_p$ is the triose phosphate utilization rate ($\mu$mol m$^{-2}$ s$^{-1}$). $P_{\text{atm}}$ is the ambient atmospheric pressure (Pa), $k_p$ is the initial slope of CO$_2$ response curve for C4 plants (Pa / Pa). The function $\beta_t$ ranges from one when soil is wet and to zero when soil is dry.

The stomatal conductance of water $g_s$ ($\mu$mol m$^{-2}$s$^{-1}$) for FBB and MED is then calculated as in Eq. (4) and Eq. (5) in the main text.
We use evaporative-resistance form of Penman-Monteith method to keep consistent with SynFlux stomatal conductance. The leaf stomatal conductance is:

\[
g_w^{-1} = \frac{\varepsilon p (e_s(T_f) - e)}{p E} - (r_a + r_{b,w}),
\]

where \(\varepsilon\) is mass ratio between water and dry air, \(p\) is air pressure, \(E\) is surface moisture flux, \(T_f\) is leaf temperature, \(e_s(T_f)\) is the saturation vapor pressure at leaf surface. \(r_a\) is aerodynamic resistance, \(r_{b,w}\) is quasi-laminar layer resistance to water vapor. \(T_f\) is estimated as follows:

\[
T_f = T + \frac{H(r_a + r_{b,H})}{c_p \rho},
\]

where \(T\) is air temperature, \(H\) is sensitive heat, \(c_p\) is specific heat of air, \(\rho\) is the mass density of air, \(r_{b,H}\) is quasi-laminar layer resistance to heat.

Stomatal conductance of \(O_3\) is calculated with molecular diffusion coefficient ratio 0.6 between \(O_3\) and water vapor:

\[
g_s = 0.6 g_w,
\]
Table S1. References of observational datasets.

| Land type group | Lat   | Lon   | Site                              | LAI | Canopy Height (m) | Sampling Period | Reference                  |
|-----------------|-------|-------|-----------------------------------|-----|-------------------|-----------------|-----------------------------|
| Deciduous Forest| 42.7°N| 72.2°W| Harvard Forest                    | 3.4 | 24                | Jan 1991–Dec 1994 | Munger et al. (1996)        |
|                 | 42.7°N| 72.2°W| Harvard Forest                    | 3.4 | 24                | Jun-Nov, 2000    | Wu et al. (2011)            |
|                 | 41.56°N| 78.77°W| Kane Experimental Forest, Pennsylvania | 1-7 | 22-23             | Apr 29, 1997–Oct 23, 1997 | Finkelstein et al. (2000)   |
|                 | 44.3°N| 79.9°W| Borden Forest, Ontario, Canada    | 2.3-4.5 | 22               | 01 May, 2008-30 Apr, 2013 | Wu et al. (2018)            |
|                 | 44.3°N| 80.9°W| Borden Forest, Ontario, Canada    | 6   | 18                | Aug 2-3, 1988    | Padro et al. (1991)         |
|                 | 44.3°N| 80.9°W| Borden Forest, Ontario, Canada    | 0.5 | 18                | Mar 17–Apr 26, 1990 | Padro et al. (1992)         |
|                 | 18.3°N| 99.7°E| Teak forest in Mea Moh, Thailand  | \   | 12                | Jan-Aug, 2004    | Matsuda et al. (2005)       |
|                 | 18.3°N| 99.7°E| Teak forest in Mea Moh, Thailand  | \   | 12                | Jul 16 – Aug 18, 2005 | Fowler et al. (2009)        |
|                 | 51.17°N|0.84°W| Alice Holt, England              | \   | 13                | 2012-2013       | Fares et al. (2014)         |
|                 | 41.7°N|12.35°E| Castelporziano, Italy            | 3.7 | 19.7              | 2012-2013       | Fowler et al. (2014)        |
|                 | 38.9°N|120.6°W| Blodgett Forest, California      | 3.6 | 5                 | Jun 1999–Jun 2000 | Kurpius et al. (2002)       |
|                 | 56.3°N| 8.4°E | Ulborg Forest, Denmark           | 8   | 12                | Jun 1994, Sep 1995 | Mikkel森 et al. (2000)      |
|                 | 56.3°N| 8.4°E | Ulborg Forest, Denmark           | 8   | 12                | Jan 1996–Dec 2000 | Mikkel森 et al. (2004)      |
|                 | 54.8°N|66.9°W | Schefferville, Canada            | \   | 5-6               | Jun-Aug 1990     | Munger et al. (1996)        |
|                 | 40.0°N|105.5°W| Niwot Ridge AmeriFlux site, Colorado | 4.2 | 11.4              | Jun-Aug 2002; May-Sep, 2003; May-Aug, 2005 | Turnipseed et al. (2009)    |
| Coniferous Forest| 55.3°N|-3.4°W| Rivox Forest, Scotland           | 10.2| 13                | May 23-27, 1992  | Coe et al. (1995)           |
|                 | 61.85°N|24.28°E| Hyytiälä, Southern Finland       | 6   | 14-18             | Aug 2001-Sep 2010 | Rannik et al. (2012)        |
|                 | 35.97°N|79.13°W| Blackwood division of Duke forest| 3.1 | 14                | Apr 15-May 1 1996 | Finkelstein et al. (2000)   |
|                 | 60.4°N|11.1°E | Hurdal, South-East Norway        | 3.4-4.5 | 13               | Jul 1, 2000-Mar 31, 2003  | Hole et al. (2004)          |
|                 | 38.9°N|120.6°W| Blodgett Forest                  | 1.2-2.9 | 4-7.6             | 2001-2006       | Fares et al. (2010)         |
|                 | 44.2°N| 0.7°W | Pine forest in southwestern France| 3   | 15                | Jun 9-22, 1992   | Lamaud et al. (1994)        |
|                 | 44.2°N| 0.7°W | Pine forest in southwestern France| 2.1 | 16-24             | Jun 21-Jul 3, 1994-Feb 21-Mar 24, 1997 | Lamaud et al. (2002)        |
| Grass           | 55.79°N|3.24°W| Auchencorth Moss                | \   | 1                 | Jan 1995–Dec 1998 | Fowler et al. (2001)       |
| Latitude | Longitude | Location | T | pH | Dates                        | Authors                  |
|---------|-----------|----------|---|----|------------------------------|--------------------------|
| 40.7ºN  | 8.6ºW     | Polder Pioalto de Sarrazola | 2.5-4.5 | 0.1-0.8 | Nov 1994–Oct 1995 | Pio et al. (2000) |
| 37ºN    | 119.8ºW   | Fresno, California | 1 | 0.2 | Jul 8–Aug 6, 1991 | Padro et al. (1994) |
| 10.75ºS | 62.37ºW   | Rondonia, Brazil | 3.9 | \ | Jan-Feb, 1999 | Sigler et al. (2002) |
| 45.8ºN  | 8.63ºE    | Ispra, Italy | \ | 0.25 | Sep 16–23, 1997 | Cieslik (2004) |
| 48.17ºN | 8.75ºE    | Klippeneck, Germany | \ | 0.2 | Sep 10-22, 1992 | Cieslik (2004) |
| 40.1ºN  | 88.2ºW    | Champaign, Illinois | \ | 0.25-0.3 | Jun 26–27, 1982 | Droppo et al. (1985) |
| 34.29ºN | 85.97ºW   | Crossvile, Alabama | 1-2.3 | 0.1-0.3 | Apr 15-Jun 13, 1995 | Meyers et al. (1998) |
| 36.8ºN  | 120.7ºW   | Fresno, California | 1.8-2.7 | 0.4-0.9 | Jul 8–Aug 6, 1991 | Padro et al. (1994) |
| 48.7ºN  | 8ºE       | Scherzheim, Denmark | \ | \ | Sep 11-22, 1992 | Pilegaard et al. (1998) |
| 48.85ºN | 1.97ºE    | Grignon, France | 5.2 | 2.2 | Apr 28, 2008–Sep 9, 2008 | Stella et al. (2011) |
| 44.4ºN  | 0.63ºW    | La Cape Sud, France | 5.1 | 2.5 | Jul 2007–Oct 2007 | Stella et al. (2011) |
| 43.82ºN | 1.38ºE    | Lamasquere, France | 3.2 | 2.5 | May 2008–Sep 2008 | Stella et al. (2011) |
| 40.05ºN | 88.37ºW   | Bondville, Illinois | 2.5-3.3 | 1.8-2.4 | Aug 18-Oct 1, 1994 | Meyers et al. (1998) |
| 36.65ºN | 87.03ºW   | Nashville, Tennessee | 1–6 | 1.2 | Jun 22–Oct 11, 1995 | Meyers et al. (1998) |
| 55.9ºN  | 2.8ºW     | Gilchriston Farm, Scotland | 3 | 0.3 | Jul, 2006 | Coyle et al. (2009) |
| 4.97ºN  | 117.85ºE | Bukit Atur near Danum Valley | 6 | 30 | Apr-Jul, 2008 | Fowler et al. (2011) |
| 10.08ºS | 61.93ºW   | Reserva Biologica Juru, Brazil | 5.6 | 40 | May 4-22, Sep 21-Oct 20, 1999 | Rummel et al. (2007) |
| 3ºS     | 59.9ºW    | Reserva Florestal Ducke | 7 | 30 | Apr 22-May 8, 1987 | Fan et al. (1990) |
|         | Harvard Forest | Blodgett Forest | Hyytiälä Forest | Borden Forest |
|---------|----------------|-----------------|-----------------|--------------|
| Season  | DJF            | JJA             | DJF             | JJA          |
| Precip  | 0.06           | 0.05            | 0.07            | 0.00         |
|         | 0.01           | 0.01            | 0.00            | 0.00         |
| Temp    | -2.3           | 18.6            | 4.3             | 19.6         |
|         | -5.1           | 15.3            | -4.4            | 19.9         |
| GWR     | 0.58           | 0.38            | 0.42            | 0.26         |
|         | 0.62           | 0.60            | 0.669           | 0.50         |
| SWGDN   | 72             | 225             | 97              | 343          |
|         | 11             | 191             | 64              | 273          |
| RH      | 0.82           | 0.84            | 0.66            | 0.42         |
|         | 0.91           | 0.74            | 0.92            | 0.75         |
| VPD     | 0.09           | 0.38            | 0.29            | 1.39         |
|         | 0.04           | 0.49            | 0.04            | 0.67         |

Table S2. Statistic summary of meteorological variables at long-term sites. Precip: liquid precipitation (kg m\(^{-2}\) s\(^{-1}\)); Temp: surface temperature (°C); GWR: root zone soil wetness; SWGDN: short wave radiation (W m\(^{-2}\)); VPD: vapor pressure deficit (kPa); RH: relative humidity.
Table S3. PFT and land category mapping among CLM, Z03 and W89.

| CLM PFT                               | Z03 surface type                  | W89 surface type                 |
|---------------------------------------|-----------------------------------|----------------------------------|
| Needleleaf evergreen tree - temperate | Evergreen needleleaf trees        | Coniferous forest                |
| Needleleaf evergreen tree - boreal    |                                   |                                  |
| Needleleaf deciduous tree - boreal    | Deciduous needleleaf trees        |                                  |
| Broadleaf evergreen tree - tropical   | Tropical broadleaf trees          | Amazon forest                    |
| Broadleaf deciduous tree - tropical   | Deciduous broadleaf trees         | Deciduous forest                  |
| Broadleaf deciduous tree - temperate  |                                   |                                  |
| Broadleaf deciduous tree - boreal     |                                   |                                  |
| Broadleaf evergreen shrub - temperate | Thorn shrubs                      | Shrub/grassland                  |
| Broadleaf deciduous shrub - temperate | Deciduous shrubs                  |                                  |
| Broadleaf deciduous shrub - boreal    |                                   |                                  |
| C3 arctic grass                       | Tundra                            | Tundra                           |
| C3 non-arctic grass                   | Short grass                       | Shrub/grassland                  |
| C4 grass                              | Corn                              |                                  |
| C3 crop                               | Crops                             | Agricultural land                |
| C3 irrigated                          |                                   |                                  |
| Symbol | Description |
|--------|-------------|
| $A_n$  | leaf net CO$_2$ assimilation rate |
| BVOC   | biogenic volatile organic compounds |
| CLM    | Community Land Model |
| CRO    | Crop |
| $C_s$  | CO$_2$ concentration at the leaf surface |
| CTMs   | chemical transport models |
| DBF    | Deciduous Broadleaf Forest |
| $D_i$  | molecular diffusivities for water |
| DO$_3$SE | The Deposition of O$_3$ for Stomatal Exchange |
| $D_v$  | molecular diffusivities for pollutant gas |
| ENF    | Evergreen Needleleaf Forest |
| ESMs   | Earth system models |
| FBB    | Farquhar-Ball-Berry stomatal scheme |
| $g_0$  | PFT-dependent minimum stomatal conductance |
| $g_{1B}$ | fitted slope parameter for Ball-Berry model |
| $g_{1M}$ | fitted slope parameter for Medlyn model |
| GRA    | Grass |
| $G_c$  | Canopy conductance |
| $G_s$  | Canopy stomatal conductance |
| $h_s$  | leaf surface relative humidity |
| $L$    | Obukhov length |
| LAI    | leaf area index |
| $L_{sha}$ | shaded LAI |
| LSMs   | land surface models |
| $L_{sun}$ | sunlit LAI |
| MAP    | mean annual precipitation |
| MED    | Medlyn stomatal scheme |
| MERRA-2 | Modern-Era Respective analysis for Research and Applications version 2 |
| MODIS  | Moderate Resolution Imaging Spectroradiometer |
| NMAEF  | normalized mean absolute error factor |
| NMBF   | normalized mean bias factor |
| NO     | nitric oxide |
| O$_3$  | ozone |
| Symbol | Description |
|--------|-------------|
| P-M | Penman-Monteith |
| PAR | photosynthetically active radiation |
| PFTs | plant functional types |
| $P_r$ | the Prandtl number for air |
| $R^2$ | $R$-squared value |
| $R_a$ | aerodynamic resistance |
| $R_{ac}$ | in-canopy aerodynamic resistance |
| $R_{adc}$ | lower canopy aerodynamic resistance |
| $R_{ag}$ | ground aerodynamic resistance |
| $R_b$ | quasi-laminar sublayer resistance |
| $r_b$ | leaf boundary resistance |
| $R_c$ | bulk surface resistance |
| $R_c$ | canopy resistance |
| $R_{cles}$ | lower canopy resistance |
| $R_{cut}$ | cuticular resistance |
| $R_{cutd0}$ | reference cuticular resistance for dry condition |
| $R_{cutw0}$ | reference cuticular resistance for wet condition |
| $R_g$ | ground resistance |
| RH | relative humidity |
| $R_s$ | stomatal resistance |
| $r_{smin}$ | minimum stomatal resistance |
| $r_s^{sha}$ | shaded stomatal resistance |
| $r_s^{sun}$ | sunlit stomatal resistance |
| RuBP | ribulose 1,5-bisphosphate |
| $S_r$ | the Schmidt number |
| SRAD | incoming shortwave solar radiation |
| SW | soil wetness |
| $T$ | surface temperature |
| TEMIR | Terrestrial Ecosystem Model in R |
| TRF | Tropical Rainforest |
| $u^*$ | friction velocity |
| $v_d$ | dry deposition velocity of O$_3$ |
| VPD | vapor pressure deficit |
| W89 | Wesely deposition scheme |
| W89FBB | Wesely deposition scheme replaced with Faquhar-Ball-Berry stomatal scheme |
| **W89MED**     | Wesely deposition scheme replaced with Medlyn stomatal scheme |
|----------------|---------------------------------------------------------------|
| **$W_{st}$**   | stomatal blocking factor                                       |
| **$z$**        | reference height                                              |
| **$z_0$**      | roughness height                                              |
| **Z03**        | Zhang et al. (2003) deposition scheme                          |
| **Z03FBB**     | Zhang et al. (2003) deposition scheme replaced with Faquhar-Ball-Berry stomatal scheme |
| **Z03MED**     | Zhang et al. (2003) deposition scheme replaced with Medlyn stomatal scheme |
| **$\kappa$**   | von Kármán constant                                           |
| **$\psi$**     | water stress                                                  |
Figure S1. Average nighttime (LT 22:00pm~4:00am) observed-simulated dry deposition velocities for five land types. Colours indicate dominant seasons during field measurements, except that for crops different colours indicate crop types (C3 and C4 crops).
Figure S2. Average JJA diurnal aerodynamic resistance ($R_a$) and boundary layer resistance ($R_b$) at long-term measurement sites.

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