Supplement of Geosci. Model Dev., 15, 9111–9125, 2022
https://doi.org/10.5194/gmd-15-9111-2022-supplement
© Author(s) 2022. CC BY 4.0 License.

Supplement of

Evaluating the vegetation–atmosphere coupling strength of ORCHIDEE land surface model (v7266)

Yuan Zhang et al.

Correspondence to: Yuan Zhang (yuan.zhang@lsce.ipsl.fr)

The copyright of individual parts of the supplement might differ from the article licence.
Calibration of $a_1$, $b_1$ parameters in ORCHIDEE.

In ORCHIDEE-trunk, the stomatal conductance formulation of (Yin and Struik, 2009) is used:

$$g_s = g_0 + \frac{A + R_d}{C_i - C_{i*}} f_{vpd}$$ \hspace{1cm} (S1)

Where $g_0$ is the residual stomatal conductance if the irradiance approaches zero, $C_{i*}$ is the $C_i$ based CO$_2$ compensation point in the absence of $R_d$, and $f_{vpd}$ is the function for the effect of leaf-to-air vapour pressure difference (VPD), and is described empirically as:

$$f_{vpd} = \frac{1}{1 + \left(\frac{a_1}{b_1} \cdot VPD\right)}$$ \hspace{1cm} (S2)

Where $a_1$ and $b_1$ are empirical constants.

Comparing Equation (S1) with Ball-Berry model equation used in (Lin et al., 2015):

$$g_s = 1.6 \left(1 + \frac{g_1}{\sqrt{VPD}}\right) \frac{A}{C_a}$$ \hspace{1cm} (S3)

Where $g_1$ is the model co-efficient, $C_a$ is the CO$_2$ concentration at the leaf surface (ppm).

Taking $C_i = C_a - \frac{A}{g_s}$, $A + R_d = A_{net} = A$ and substituting in Equation (S1), we obtain:

$$(C_a - C_{i*})g_s^2 - (A + A f_{vpd})g_s + g_0(C_a - C_{i*}) + g_0A = 0$$

If $g_0 = 0$ and $C_a - C_{i*} = C_a$

$$C_a \left(\frac{A}{C_a} \right) g_s - (A + A f_{vpd}) = 0$$

Further simplifying above equation,

$$g_s = \left(1 + f_{vpd}\right) \frac{A}{C_a}$$ \hspace{1cm} (S4)

Equating equations (S3) and (S4),
\[ f_{vpd} = 0.6 + \frac{1.6g_1}{\sqrt{V_{PD}}} \]  \hspace{1cm} (S5)

Solving equations (S2) and (S5) and using \( g_1 \) values for different PFTs from \((Lin \ et \ al., \ 2015)\), we get a corresponding \( a_1 \) and \( b_1 \) values. See Table S2 for different PFTs \( a_1 \) and \( b_1 \) values estimated by constraining \( g_1 \) values from \((Lin \ et \ al., \ 2015)\).
Figure S1: The stomatal conductance model coefficient in ORCHIDEE ($f_{vpd}$) which is equivalent ($g_1$) Lin et al. (2015). $f_{vpd}$ in ORCHIDEE is a function of vapor pressure deficit (VPD) and empirical parameters $a_1$ and $b_1$. $f_{vpd}$ is plotted against arbitrary values of VPD with different $a_1$, $b_1$ values from default ORCHIDEE (Yin and Struik, 2009) and Lin et al. (2015).
Figure S2 Performance of random forest models in the validation datasets

a) 

\[ R = 0.83 \]  

\text{validate}

\[ \Omega \text{ flux} \]

\[ \Omega \text{ predict} \]

b) 

\[ R = 0.85 \]  

\text{validate}

\[ \Omega \text{ Ctrl} \]

\[ \Omega \text{ predict} \]

c) 

\[ R = 0.84 \]  

\text{validate}

\[ \Omega \text{ Clb}_g s \]

\[ \Omega \text{ predict} \]

d) 

\[ R = 0.87 \]  

\text{validate}

\[ \Omega \text{ Clb}_h t \]

\[ \Omega \text{ predict} \]
Figure S3. An example to explain the SHAP values. For this data sample, the $\Omega$ value (0.2) is smaller than the base value (all sample mean $\Omega$ of 0.29). SHAP values show the contribution of each factor. i.e. the PFT type of this data is expected to cause a decrease of $\Omega$ from the base value by 0.0708, etc.
Figure S4 Same as Figure 7 but for Gs SHAP values.
Figure S5. The dependence of Ga on LAI and different canopy heights in ORCHIDEE parameterization under 3 m s$^{-1}$ wind speed, sea level pressure and 15 °C condition.
Figure S6. Impacts of uncertainties in the empirical calculation of $\Omega$ on the comparison. The boxes from the left to right: Ctrl simulation, De Kauwe et al. (2017) dataset, increasing Ga by 30%, decreasing Ga by 30%, correction of the energy imbalance.
<table>
<thead>
<tr>
<th>Site name</th>
<th>Time</th>
<th>PFT</th>
<th>ORCHIDEE PFT fractions</th>
<th>Canopy Height (m)</th>
<th>Measurement Height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR-SLu</td>
<td>2009-2011</td>
<td>MF</td>
<td>0 0 0 0.14 0.14 0.31 0 0 0.25 0.16 0 0</td>
<td>4.5</td>
<td>13</td>
</tr>
<tr>
<td>AT-Neu</td>
<td>2002-2012</td>
<td>GRA</td>
<td>0 0 0 0 0 0 0 0 0 1 0 0 0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>AU-ASM</td>
<td>2010-2013</td>
<td>ENF</td>
<td>0 0 0 0.65 0 0 0 0 0 0 0.35 0 0</td>
<td>6.5</td>
<td>11.6</td>
</tr>
<tr>
<td>AU-Cpr</td>
<td>2010-2014</td>
<td>SAV</td>
<td>0 0 0 0.12 0.12 0.36 0 0 0 0.4 0 0 0</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>AU-Cum</td>
<td>2012-2014</td>
<td>EBF</td>
<td>0 0 0 0 0.85 0 0 0 0 0.15 0 0 0</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td>AU-DaP</td>
<td>2007-2013</td>
<td>GRA</td>
<td>0 0 0.25 0 0 0 0 0 0 0 0.75 0 0</td>
<td>0.3</td>
<td>15</td>
</tr>
<tr>
<td>AU-DaS</td>
<td>2008-2014</td>
<td>SAV</td>
<td>0 0 0.6 0 0 0 0 0 0 0 0.4 0 0</td>
<td>16.4</td>
<td>21</td>
</tr>
<tr>
<td>AU-Dry</td>
<td>2008-2014</td>
<td>SAV</td>
<td>0 0 0.6 0 0 0 0 0 0 0 0.4 0 0</td>
<td>12.3</td>
<td>15</td>
</tr>
<tr>
<td>AU-Emr</td>
<td>2011-2013</td>
<td>GRA</td>
<td>0 0.09 0 0 0 0 0 0 0 0.3 0.7 0</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>AU-Gin</td>
<td>2011-2014</td>
<td>WSA</td>
<td>0 0 0 0 0 0.6 0 0 0 0.4 0 0 0</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>AU-GWW</td>
<td>2013-2014</td>
<td>SAV</td>
<td>0 0.04 0.56 0 0 0 0 0 0 0.31 0.09 0 0</td>
<td>18</td>
<td>35</td>
</tr>
<tr>
<td>Station</td>
<td>Period</td>
<td>Marine</td>
<td><em>A</em></td>
<td><em>B</em></td>
<td><em>C</em></td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>--------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>AU-How</td>
<td>2001-2014</td>
<td>WSA</td>
<td>0</td>
<td>0.8</td>
<td>0</td>
</tr>
<tr>
<td>AU-Rig</td>
<td>2011-2014</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AU-Stop</td>
<td>2008-2014</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AU-TTE</td>
<td>2012-2013</td>
<td>OSH</td>
<td>0.5</td>
<td>0</td>
<td>0.09</td>
</tr>
<tr>
<td>AU-TUM</td>
<td>2001-2014</td>
<td>EBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AU-Whr</td>
<td>2011-2014</td>
<td>EBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AU-Ync</td>
<td>2012-2014</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>BE-Bra</td>
<td>1996-2014</td>
<td>MF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>BE-Lon</td>
<td>2004-2014</td>
<td>CRO</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>BE-Vie</td>
<td>1996-2014</td>
<td>MF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>BR-Sa3</td>
<td>2000-2004</td>
<td>EBF</td>
<td>0</td>
<td>0.95</td>
<td>0.05</td>
</tr>
<tr>
<td>CA-Qfo</td>
<td>2003-2010</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CA-SF1</td>
<td>2003-2006</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Country</td>
<td>Time Period</td>
<td>Code</td>
<td>ENF</td>
<td>OSH</td>
<td>GRA</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>CA-SF2</td>
<td>2001-2005</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CA-SF3</td>
<td>2001-2006</td>
<td>OSH</td>
<td>0.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CH-Oc1</td>
<td>2002-2008</td>
<td>GRA</td>
<td>0.05</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CN-Cha</td>
<td>2003-2005</td>
<td>MF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CN-Cng</td>
<td>2007-2010</td>
<td>GRA</td>
<td>0.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CN-Dan</td>
<td>2004-2005</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CN-Du2</td>
<td>2006-2008</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CN-HaM</td>
<td>2002-2004</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CN-Qia</td>
<td>2003-2005</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CZ-wet</td>
<td>2006-2014</td>
<td>WET</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DE-Geb</td>
<td>2001-2014</td>
<td>CRO</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DE-Gri</td>
<td>2004-2014</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DE-Hai</td>
<td>2000-2012</td>
<td>DBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Country</td>
<td>Period</td>
<td>Code</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
</tr>
<tr>
<td>Country</td>
<td>Start-End</td>
<td>Code</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>IT-CA3</td>
<td>2011-2014</td>
<td>DBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-Cpz</td>
<td>1997-2009</td>
<td>EBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-Isp</td>
<td>2013-2014</td>
<td>DBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-Lav</td>
<td>2003-2014</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-MBo</td>
<td>2003-2013</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-Noe</td>
<td>2004-2014</td>
<td>CSH</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-PT1</td>
<td>2002-2004</td>
<td>DBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-Ren</td>
<td>1998-2013</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-Ro2</td>
<td>2002-2012</td>
<td>DBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-SR2</td>
<td>2013-2014</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IT-SRo</td>
<td>1999-2012</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NL-Hor</td>
<td>2004-2011</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NL-Loo</td>
<td>1996-2013</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Country</td>
<td>Period</td>
<td>Mass</td>
<td>Date 1</td>
<td>Date 2</td>
<td>Date 3</td>
</tr>
<tr>
<td>---------</td>
<td>--------------</td>
<td>------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>RU-Fyo</td>
<td>1998-2014</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SD-Dem</td>
<td>2005-2009</td>
<td>SAV</td>
<td>0</td>
<td>0</td>
<td>0.07</td>
</tr>
<tr>
<td>US-AR1</td>
<td>2009-2012</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-AR2</td>
<td>2009-2012</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-ARM</td>
<td>2003-2012</td>
<td>CRO</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Blo</td>
<td>1997-2007</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Cop</td>
<td>2001-2007</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-GLE</td>
<td>2004-2014</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-KS2</td>
<td>2003-2006</td>
<td>CSH</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Los</td>
<td>2000-2014</td>
<td>WET</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Mc2</td>
<td>2002-2014</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-MMS</td>
<td>1999-2014</td>
<td>DBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Ne1</td>
<td>2001-2013</td>
<td>CRO</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Country/Code</td>
<td>Period</td>
<td>Code</td>
<td>Year 1 Value</td>
<td>Year 2 Value</td>
<td>Year 3 Value</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>US-Nc3</td>
<td>2001-2013</td>
<td>CRO</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-NR1</td>
<td>1998-2014</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Prr</td>
<td>2010-2013</td>
<td>ENF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-SRG</td>
<td>2008-2014</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Syv</td>
<td>2001-2014</td>
<td>MF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Ton</td>
<td>2001-2014</td>
<td>WSA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Tw4</td>
<td>2013-2014</td>
<td>WET</td>
<td>0.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Twt</td>
<td>2009-2014</td>
<td>CRO</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Var</td>
<td>2000-2014</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-WCr</td>
<td>1999-2014</td>
<td>DBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Whs</td>
<td>2007-2014</td>
<td>OSH</td>
<td>0.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>US-Wkg</td>
<td>2004-2014</td>
<td>GRA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ZA-Kru</td>
<td>2000-2010</td>
<td>SAV</td>
<td>0</td>
<td>0</td>
<td>0.14</td>
</tr>
<tr>
<td>ZM-Mon 2000-2009</td>
<td>DBF</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>------------------</td>
<td>-----</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

* the PFT acronyms of ORCHIDEE PFTs are:

- **TrEBF**  Tropical broad-leaved evergreen forests
- **TrDBF**  Tropical broad-leaved raingreen forests
- **TeENF**  Temperate needleleaf evergreen forests
- **TeEBF**  Temperate broad-leaved evergreen forests
- **TeDBF**  Temperate broad-leaved summergreen forests
- **BoENF**  Boreal needleleaf evergreen forests
- **BoDBF**  Boreal broad-leaved summergreen forests
- **BoDNF**  Boreal needleleaf summergreen forests
- **C3Gra**  C3 grasslands
- **C4Gra**  C4 grasslands
- **C3Cro**  C3 croplands
- **C4Cro**  C4 croplands
Table S2. Mean $g_1$ values for plant functional types from (Lin et al., 2015) and their corresponding empirical parameters $a_1$ and $b_1$ calibrated for this study using the method described in this Supplementary.

<table>
<thead>
<tr>
<th>PFTs in ORCHIDEE</th>
<th>$a_1$ (default ORCHIDEE)</th>
<th>$b_1$ (default ORCHIDEE)</th>
<th>PFTs from Lin et al., (2015)</th>
<th>$g_1$ from Lin et al., (2015)</th>
<th>$a_1$ (constrained by $g_1$)</th>
<th>$b_1$ (constrained by $g_1$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TrEBF</td>
<td>0.85</td>
<td>0.14</td>
<td>Tropical rain forest tree</td>
<td>3.77</td>
<td>0.94</td>
<td>0.048</td>
</tr>
<tr>
<td>TrDBF</td>
<td>0.85</td>
<td>0.14</td>
<td>Evergreen gymnosperm tree</td>
<td>2.98</td>
<td>0.92</td>
<td>0.053</td>
</tr>
<tr>
<td>TeENF</td>
<td>0.85</td>
<td>0.14</td>
<td>Evergreen gymnosperm tree</td>
<td>2.35</td>
<td>0.90</td>
<td>0.056</td>
</tr>
<tr>
<td>TeEBF</td>
<td>0.85</td>
<td>0.14</td>
<td>Deciduous angiosperm tree</td>
<td>3.37</td>
<td>0.93</td>
<td>0.051</td>
</tr>
<tr>
<td>TeDBF</td>
<td>0.85</td>
<td>0.14</td>
<td>Evergreen angiosperm tree</td>
<td>4.64</td>
<td>0.95</td>
<td>0.044</td>
</tr>
<tr>
<td>BoENF</td>
<td>0.85</td>
<td>0.14</td>
<td>Evergreen gymnosperm tree</td>
<td>2.35</td>
<td>0.90</td>
<td>0.056</td>
</tr>
<tr>
<td>BoDBF</td>
<td>0.85</td>
<td>0.14</td>
<td>Deciduous angiosperm tree</td>
<td>4.64</td>
<td>0.95</td>
<td>0.044</td>
</tr>
<tr>
<td>BoDNF</td>
<td>0.85</td>
<td>0.14</td>
<td>Evergreen gymnosperm tree</td>
<td>2.35</td>
<td>0.90</td>
<td>0.056</td>
</tr>
<tr>
<td>C3Gra</td>
<td>0.85</td>
<td>0.14</td>
<td>C3 grass</td>
<td>4.50</td>
<td>0.95</td>
<td>0.045</td>
</tr>
<tr>
<td>C4Gra</td>
<td>0.72</td>
<td>0.20</td>
<td>C4 grass</td>
<td>1.62</td>
<td>0.85</td>
<td>0.058</td>
</tr>
<tr>
<td>C3Cro</td>
<td>0.85</td>
<td>0.14</td>
<td>C3 crops</td>
<td>5.79</td>
<td>0.96</td>
<td>0.039</td>
</tr>
<tr>
<td>C4Cro</td>
<td>0.72</td>
<td>0.20</td>
<td>C4 crops</td>
<td>4.22</td>
<td>0.95</td>
<td>0.046</td>
</tr>
</tbody>
</table>

<sup>1</sup> BoDNF is absent in Lin et al. (2015) dataset, due to the similarity between BoDNF and BoENF during the growing season, we used the same value here.
<table>
<thead>
<tr>
<th>PFTs in ORCHIDEE</th>
<th>Default canopy height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TrEBF</td>
<td>30</td>
</tr>
<tr>
<td>TrDBF</td>
<td>30</td>
</tr>
<tr>
<td>TeENF</td>
<td>20</td>
</tr>
<tr>
<td>TeEBF</td>
<td>20</td>
</tr>
<tr>
<td>TeDBF</td>
<td>20</td>
</tr>
<tr>
<td>BoENF</td>
<td>15</td>
</tr>
<tr>
<td>BoDBF</td>
<td>15</td>
</tr>
<tr>
<td>BoDNF</td>
<td>15</td>
</tr>
<tr>
<td>C3Gra</td>
<td>0.5</td>
</tr>
<tr>
<td>C4Gra</td>
<td>0.6</td>
</tr>
<tr>
<td>C3Cro</td>
<td>1</td>
</tr>
<tr>
<td>C4Cro</td>
<td>1</td>
</tr>
</tbody>
</table>