

Changes from Broch and Slagstad 2012

Jago Strong-Wright

July 14, 2021

Units

- The overall unit of time changed from hours to days so R_1, R_2, P_1, P_2 and J_{max} are multiplied by 24
- Irradiance is changed from $\mu\text{mol photons m}^{-2}\text{s}^{-1}$ to $\text{mol photons m}^{-2}\text{days}^{-1}$.

This changes α by a factor of $\frac{10^6}{60 \times 60}$ and I_{sat} by a factor of $\frac{24 \times 60 \times 60}{10^6}$.

Parameters

- T_{AP} : The solution to the equation for T_{AP} on the left column of page 766 is $T_{AP} = 1737.7^\circ\text{K}$.
- T_{APL} and T_{APH} : Solving equation 13 for $P_{max}(T_{APL})$ and $P_{max}(T_{APH})$ gives $T_{APH} = 1414.87^\circ\text{K}$ and $T_{APL} = 4547.89^\circ\text{K}$.
- Table 3 gives $P_2 = 1.44 \times 10^{-3} \text{gCdm}^{-2}\text{h}^{-1}$ but page 766 states $1.3 \times 10^{-3} \text{gCdm}^{-2}\text{h}^{-1}$. Using the table value there is no valid solutions for T_{APL} and T_{APH} so we have used the paper value.
- Assuming these values of T_{AP} , T_{APH} and T_{APL} then the calculated value for P in the right column of page 766 can be used to solve for α which is found to be $3.338 \times 10^{-5} \text{gCdm}^{-2}\text{h}^{-1} (\mu \text{ mol photons m}^{-2}\text{s}^{-1})^{-1}$.
- Similarly to T_{AP} the value for T_{AR} given in the paper is not the solution to equation 14 but the value given in the table is.
- Assuming that the values of N_{min} and N_{max} then $\min(1 - N_{min}/N) = 1 - N_{min}/N_{max} = 0.5454$ (not 0.65 as given in the bottom right of page 767). This changes the parameters m_1 and m_2 to 0.12925 and 0.03575. Alternatively, if the stated values of m_1 and m_2 are correct then $N_{max} = 0.0286$.