

# Changes from Broch and Slagstad 2012

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  $\alpha$  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  $\alpha$  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  $N_{max} = 0.0286$ .