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Addition/Correction

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Correction to Mechanistic Modeling of Broth Temperature in Outdoor Photobioreactors

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The formula used to estimate the heat flux associated with the amount of diffuse solar radiation reaching the algae in the photobioreactor ($Q_{ra,d}$, W) was given as follows in the original article:

$$Q_{ra,d} = \tau\varepsilon_r(\pi R_r^2 + 2\pi R_r L_r)H_d \quad (10)$$

where τ is the wall transmittance (−), ε_r is the reactor emissivity (−), R_r and L_r are the reactor radius and height, respectively (m), and H_d is the intensity of the diffuse solar radiation reaching the ground surface (W m^{-2}). The first term of the sum represents the amount of diffuse radiation reaching the top surface of the reactor; and the second term represents the amount of diffuse solar radiation reaching the lateral surface of the reactor. The current expression of the second term does not account for the form factor between the reactor lateral surface and the atmosphere. As the diffuse lateral radiation reaching the lateral surface of the reactor only originates from above the reactor, the second term of the sum should be multiplied by a factor 0.5. Equation 10′ should therefore be corrected to:

$$Q_{ra,d} = \tau\varepsilon_r(\pi R_r^2 + \pi R_r L_r)H_d \quad (10')$$

The formula was erroneous only in the article but the code used to predict the results presented in the article was correct.

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