Penman/Monteith evaporation from the EPIC model

Eingabewerte berechnet oder gemessen

$$\delta = \left(\frac{e_a}{T+273}\right)\left(\frac{6791}{T+273} - 5.03\right)$$

$$G = 0.12 \cdot \left(T_i - \left(\frac{T_{i-1} + T_{i-2} + T_{i-3}}{3}\right)\right)$$

$$AD = \frac{0.01276 \cdot PB}{1 + 0.0367 \cdot T}$$

$$E_p = \frac{\delta \cdot (h_0 - G) + \frac{86.7 \cdot \mathrm{AD} \cdot \mathrm{VPD}}{AR}}{\mathrm{HV} \cdot \left(\delta + \gamma \cdot \left(1 + \frac{CR}{AR}\right)\right)}$$

$$CR = \frac{p_1}{\mathrm{LAI} \cdot g_0{}^* \cdot (1.4 - (0.00121 \cdot CO_2))}$$

$$g_0{}^* = g_0 \cdot FV$$

$$FV = 1 - (b_v \cdot (\mathrm{VPD} - \mathrm{VPD}_t)) \geq 0.1$$

$$\gamma = 6.6 \cdot 10^{-4} \cdot PB$$

$$HV = 2.5 - (0.0022 \cdot T)$$

$$h_{oi} = \mathrm{RA}_i \cdot (1.0 - \mathrm{AB}_i) - \mathrm{RAB}_i\left(\frac{0.9 \cdot \mathrm{RA}_i}{\mathrm{RAMX}_i} + 0.1\right)$$

$$AB = \mathrm{AB}_p \cdot (1 - SC) + \mathrm{AB}_s \cdot SC$$

$$SC = min\left(1; \frac{LAI_i}{LAI_{SC1}}\right)$$

$$RAB_i = 4.9 \cdot 10^{-9} \cdot 0.34 - (0.14 \cdot \sqrt{e_d}) \cdot (T_i + 273)^4$$

$$AR = \frac{6.25 \cdot \left(\ln\left(\frac{10 - \mathrm{ZD}}{\mathrm{Z0}}\right)\right)^2}{V}$$

$$Z0 = 0.131 \cdot \mathrm{CHT}^{0.997}$$

$$ZD = 0.702 \cdot \mathrm{CHT}^{0.979}$$

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