|  |  |  |
| --- | --- | --- |
| **Parameter** | **Details** | **Notes** |
| dz | grid stepsize (model layer thickness) (m) | 1 |
| Kz\_ak | open water diffusion parameter (-) | If set to NaN, calculated from lake surface area |
| Kz\_ak\_ice | under ice diffusion parameter (-) | If set to NaN, calculated from lake surface area |
| Kz\_N0 | minimum stability frequency (s-2) | Default = 7 x 10-5 |
| C\_shelter | wind shelter parameter | If set to NaN, calculated from lake surface area |
| lat | latitude (decimal degrees) | 49.661944 |
| lon | longitude (decimal degrees) | 93.721944 |
| alb\_melt\_ice | albedo of melting ice (-) | Default = 0.3 |
| alb\_melt\_snow | albedo of melting snow (-) | Default = 0.77, can be set lower |
| PAR\_sat | PAR saturation level for phytoplankton growth (mol(quanta) m-2 s-1) | Default = 3 x 10-5 |
| f\_par | Fraction of PAR in incoming solar radiation (-) | Typically 42-48%, set at 45% |
| beta\_chl | Optical cross\_section of chlorophyll (m2 mg-1) | Default = 0.015 (Kirk 1983) |
| lambda\_i | PAR light attenuation coefficient for ice (m-1) | Default = 5 |
| lambda\_s | PAR light attenuation coefficient for snow (m-1) | Default = 15 |
| F\_sed\_sld | volume fraction of solids in sediment (= 1-porosity) |  |
| I\_scV | scaling factor for inflow volume (-) | Set at 0.7359 (from L227 inflow summary document) |
| I\_scT | scaling coefficient for inflow temperature (-) | Default = 0 |
| I\_scC | scaling factor for inflow concentration of C (-) | Default = 1 |
| I\_scS | scaling factor for inflow concentration of S (-) | Default = 1 |
| I\_scTP | scaling factor for inflow concentration of total P (-) | Default = 1 |
| I\_scDOP | scaling factor for inflow concentration of diss. organic P (-) | Default = 1 |
| I\_scChl | scaling factor for inflow concentration of Chl a (-) | Default = 1 |
| I\_scDOC | scaling factor for inflow concentration of DOC  (-) | Default = 1 |
| swa\_b0 | non-PAR light atteneuation coeff. (m-1) | Default = 2.5 |
| swa\_b1 | PAR light atteneuation coeff. (m-1) | Default = 1.05 |
| S\_res\_epi | Particle resuspension mass transfer coefficient, epilimnion (m day-1, dry) | Default = 3.30 x 10-7 |
| S\_res\_hypo | Particle resuspension mass transfer coefficient, hypolimnion (m day-1, dry) | Default = 3.30 x 10-8 |
| H\_sed | height of active sediment layer (m, wet mass) | Default = 0.03 |
| Psat\_L | Half saturation parameter for Langmuir isotherm | Default = 2500 |
| Fmax\_L | Scaling parameter for Langmuir isotherm | Default = 8000 |
| w\_s | settling velocity for S (m day-1) | Default = 0.25 |
| w\_chl | settling velocity for Chl a (m day-1) | Typically 0.1 – 1, set at 0.2 |
| Y\_cp | yield coefficient (chlorophyll to carbon) \* (carbon to phosphorus) ratio (-) | Default = 1 |
| m\_twty | loss rate (1/day) at 20 deg C | Default = 0.2 |
| g\_twty | specific growth rate (1/day) at 20 deg C | Default = 1.5 |
| k\_twty | specific Chl a to P transformation rate (1/day) at 20 deg C | Default = 2 x 10-4 |
| dop\_twty | specific DOP to P transformation rate (day-1) at 20 deg C | Default = 0 |
| P\_half | Half saturation growth P level (mg/m3) | Default = 0.2 |
| PAR\_sat\_2 | PAR saturation level for phytoplankton growth (mol(quanta) m-2 s-1) | Default = 3 x 10-5 |
| beta\_chl\_2 | Optical cross\_section of chlorophyll (m2 mg-1) | Default = 0.015 (Kirk 1983) |
| w\_chl\_2 | Settling velocity for Chl a (m day-1) | Default = 0.16 |
| m\_twty\_2 | Loss rate (1/day) at 20 deg C | Default = 0.2 |
| g\_twty\_2 | Specific growth rate (1/day) at 20 deg C | Default = 1.5 |
| P\_half\_2 | Half saturation growth P level (mg/m3) | Default = 0.2 |
| oc\_DOC | Optical cross-section of DOC (m2/mg DOC) | Default = 0.01 |
| qy\_DOC | Quantum yield (mg DOC degraded/mol quanta) | Default = 0.1 |
| k\_BOD |  |  |
| k\_SOD |  |  |
| theta\_BOD | Temperature dependency for decomposition | Default = 1.047 (Bowie et al. 1985) |
| theta\_BOD\_ice |  |  |
| open\_slot |  |  |
| open\_slot |  |  |
| theta\_T |  |  |
| pH |  |  |
| Q10 |  |  |
| wc\_factor |  |  |
| T\_ref |  |  |