GENIE-land documentation version 0.1

Phil P Harris

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1 Introduction

This document is the equations that make up the forst version of the land-surface scheme in GENIE. This scheme is based on Pete Cox's Interactive Vegetation Model (IVM), which is itself a (very) r6 19Td (sc)he

fraction, D (dimensionless), the fraction of 24 hours when the sun is above the horizon for the extra

3.3 Hydrology

Canopy interception is neglected from the model, so

P

determinants of photosynthesis, mean incident photosynthetically activ

where I_{par}

, (Pa) the photorespiration compensation point:

$$= \frac{8}{\cdot} \; O_a$$

5 Vegetation dynamics (TRIFFID)

A

where L_{max} and L_{min} are parameters describing the maximum and minimum leaf area index values for the given plant functional type, and L_b is the \balanced" LAI which would be reached if t

Parameter	Units	Broadleaf Tree	Needleleaf Tree	C_3 Grass	C_4 Grass	Shrub
a_{wl}	kg C m 2	0.650	0.650	0.005	0.005	0.100
sl	kg C m 3	0.010	0.010	0.010	0.010	0.010
	yr3	0.004	0.004	0.100	0.100	0.030
w	yr3	0.010	0.010	0.200	0.200	0.050
3		0.250	0.250	0.250	0.250	0.250
3 l3						

0.4204 632.98 (-1.00) Ti ET Q q 4.8 0 0 -120 4873.88 6413.68 cm BI /IM true /W 1 /H 1 /BPC 1 ID EI Q q 4.8 0 0 -120 881298 7134.88 cm

The competition term (last term on the righthand side of equation

The aerodynamic roughness lengths, which are used by GENIE-lam4 1 0 0a.194 0 Td (lt)Tj 181.56710 Td (lcalculat)Tj 140.7

Each of