LCImod (Ligno-cellulose) model diagrams and code

TITLE:

*Calculating co-metabolic costs of lignin decay and their impacts on carbon use efficiency*

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C2 = 200 { Polysaccharide pool size; user specified }

C3 = 100 { Polyphenolics pool size; user specified }

LCI = C3/(C3+C2) { Lignocellulose index }

k2 = max(k2a,k2b) { Realized decay rate coefficient for C2 }

k2max = 0.1 { maximum decay rate coefficient for C2; user specified }

k2a = k2max+m2a\*LCI { Decay rate coefficient when LCI < LCI threshold }

m2a = (k2max-k2at04)/(0-LCImin) { Slope of the relationship between k2 and LCI when LCI > LCI threshold }

k2b = m2b\*LCI-(m2b\*LCImax-k3max) { Decay rate coefficient for k2 when LCI > LCI threshold }

m2b = m3\*e2/e3 { Slope of the relationship between k2 and LCI when LCI > LCI threshold }

b2b = k3max-m2b\*LCImax { Intercept of the linear relationship between k2 and LCI when LCI > threshold LCI }

k2at04 = m2b\*LCImin+b2b { k2 value at LCI threshold }

k3 = max(0,m3\*LCI+b3) { Calculated decay rate coefficient for C3 }

b3 = (0-LCImin)\*m3 { Intercept of the linear relationship between k3 and LCI }

k3max = 0.01 { Maximum decay rate coefficient for C3 }

m3 = k3max/(LCImax-LCImin) { Slope of the relationship between k3 and LCI }

Kc2 = C2/k2-C2 { Half-saturation coefficient for C2 }