

# Example

Abstraction



Detail

$$X(t) = S(X, t) - C(X, t)X(t)$$

Nonlinear kinetics

$$X(t) = BU(t) - A\xi(t)KX(t)$$

Globally Fixed value

Static vegetation  
distribution

Fixed value with  
vegetation type

$f(\text{PFT})$

$f(\text{DV})$

$f(\text{trait})$

# Level of complexity

- 1 Mass balance, rate heterogeneity  
time-dependent drivers
- 2 Plant allocation, environmental modifier,  
donor pool-controlled transfer
- 3 Mortality rate varies with plant  
functional type ( PFT)
- 4 Mortality rate varies with dynamic  
vegetation (DV), such as ED, PPA, FATES
- 5 Connecting plant and microbial traits to  
rate of mortality or decomposition