In[3934]:=
```
Clear["Global`*"]
```

Parameters

In[3935]:=
```
ρmax = 1 (*maximum carbon uptake rate (d^-1)*);
αmax = 1.5 * 10^-9(*attack rate of mixotroph on bacteria (cm^2*d^-1*cellM^-1)*);
b = .15(*conversion rate of bacteria to mixotroph (cellM*cellB^-1)*);
KB = 1 × 10^8; (*carrying capacity of bacteria (cellB*cm^-2)*);
r = .693(*growth rate of bacteria (d^-1)*);
h = 250(*half saturation constant for photosynthesis (μmol quanta*m^2*s^-1)*);
Iin = 100(*incident light (μmol quanta*m^2*s^-1)*);
k = 5 * 10^(-7)(*mixotroph light absorbance constant (cm^2*cellM^-1)*);
l = .05(*mixotroph mortality rate (d^-1)*);
mρ = .1;
(*photosynthetic temeprature sensitivity coefficient (°C^-1)*);
mα = .25;
(*heterotrophic temperature sensitivity coefficient (°C^-1)*);
T0 = 13; (*baseline temperature (°C)*);
T0α = T0 - 1/mα (*minmimum temperature for heterotrophy (°C)*);
T0ρ = T0 - 1/mρ (*minmimum temperature for photosynthesis (°C)*);
kb = 8.62 * 10^-5(*Boltzmann constant (eV*K^-1)*);
Eaρ = .5 (*photosynthetic activation energy (eV)*);
Eaα = .85 (*heterotrophic activation energy (eV)*);
r0ρ = 6.4279909706*^8 (*photosynthetic normalization constant*);
r0α = 9.412997398*^14 (*heterotrophic normalization constant*);
```

Equations/Functions for generating outputs

θ vs. Temperature plots

Pairwise invasibility plots

C-cycling related figures (Dashed - genetically static, Solid - evolving)