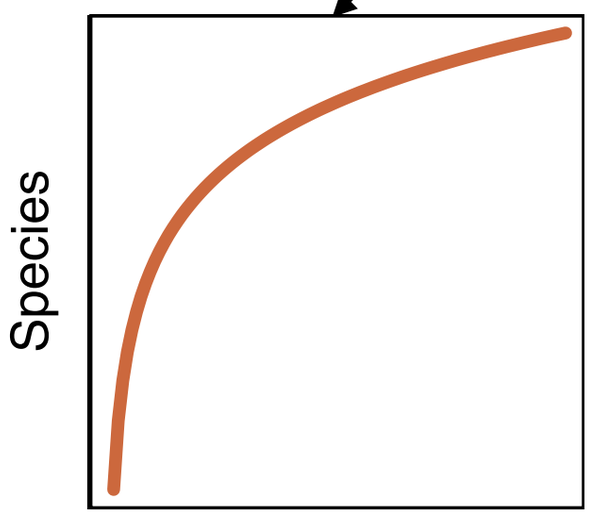
Joint probability of abundance (n) and metabolic rate (ε)

$$R(n,\varepsilon) = \frac{1}{Z} e^{-\lambda_1 n} e^{-\lambda_2 n\varepsilon}$$

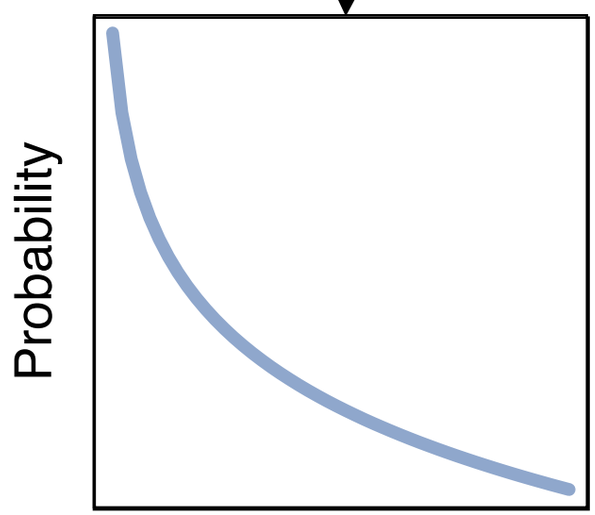
λ_1 and λ_2 are Lagrange multipliers from constrained entropy maximization

$$S_0 \sum_n \Pi(0|n) \int R(n,\varepsilon) d\varepsilon$$

Π comes from entropy maximization across space



$$\int R(n,\varepsilon) d\varepsilon$$



$$\frac{S_0}{N_0} \int n R(n,\varepsilon) dn$$