Top predators with

## Parameters foodweb

```{r}

pars = list()

pars$competition\_coefficient = 0.025

pars$Sbasal = 5 # number of basal species

pars$Smax = 1000 # Maximal number of species allowed

#pars$Bspe = 4 # Basal species impact on the speciation probality

#pars$Bext = 4 # Basal species impact on extinction probability

pars$av\_r = 0.18#0.185 # 0.2 range of the niche

pars$sd = 0.5\*pars$av\_r + 0.0001 # Standard deviation of the normal distribution used to calculate the niche optimum trait of a new species

#pars$sd = 0.5\*pars$av\_r + 0.0001 # Standard deviation of the normal distribution used to calculate the niche optimum trait of a new species

# PROBABILITY OF MUTATION

pars$u\_max = 0.23#0.15 #0.15 # mutation probability (0.075, )

pars$d = 0.5 # Decrease speed of the establishment probability

pars$I\_max = 60 # Maximal number of interactioning species

pars$beta\_n = 1 # parameter of the beta distribution

# STRENGTH OF NEUTRAL-DRIVEN EVOLUTION

pars$SN = 0 # strength for neutral-driven evolution

# PROBABILITY OF ESTABLISHMENT

# strength of selection-driven selection is 1 - SN

pars$estab\_prob\_neutral = 0.5 # neutral probability of establishment

# Facilitation & Foodweb

pars$u\_0pos = 1

pars$u\_1pos = -1

pars$a\_upos = 0.45

# PROBABILITY OF EXTINCTION

pars$ext\_prob\_neutral = rep(0.0005, pars$Smax) # neutral probability of extinction

# Competition

pars$e\_0neg = 0.1 #0.15 # Asymptotic extinction probability with infinite negative interactions

pars$a\_eneg = 0.025 # Shape of the exponential decay of the negative extinction - interaction relationship

pars$e\_1neg = -pars$e\_0neg # Extinction probability with absence of interactions

# Facilitation & Foodweb

pars$e\_0pos = 0.075

pars$e\_1pos = 5.19

pars$a\_epos = 1.2

#########################################

# Logistic function parameters

pars$k <- 10 # Steepness of the logistic curve

pars$midpoint <- 0.5 # Midpoint for the logistic curve

```

# parameters simulation

```{r}

nsteps = 100

nsim = 1

```

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beta\_ext \* 0.097 + (1 - beta\_ext) \* avg\_similarity

# New pars based on testing (13 sept)

```{r}

pars$u\_0pos <- 0.4 # Baseline probability

pars$u\_1pos <- 0.7 # Scaling factor

pars$a\_upos <- 0.2 # Shape of the exponential increase

pars$e\_0neg <- 0.01 # Baseline probability

pars$e\_1neg <- 0.05 #0.5 # Scaling factor for out-degree

pars$a\_eneg <- 0.2 #0.2 Shape of the exponential increase

pars$beta\_ext <- 0.8 # Control strength between out-degree and similarity

pars$competition\_coefficient <- 0.01 #0.1 #0.1 #0.06

pars$multiplier = 0.9 #1

```

```{r}

pars$beta\_n = 50

```

Top predators with:

```{r}

pars$av\_r = 0.16 #0.16

pars$beta\_ext <- 0.8 # Control strength between out-degree and similarity

pars$competition\_coefficient <- 0.0025 #0.1 #0.1 #0.06

pars$multiplier = 1 # or also 0.8

```