



```
zeta_speciation <- 0.044
```

```
zeta_extinction <- 0.044
```

```
speciation_global_scale ~ dnHalfCauchy(0.0,zeta_speciation)
```

```
extinction_global_scale ~ dnHalfCauchy(0.0,zeta_extinction)
```

```
log_speciation[1] ~ dnUniform(-10.0,10.0)
```

```
log_extinction[1] ~ dnUniform(-10.0,10.0)
```

```
speciation[1] := exp( log_speciation[1] )
```

```
extinction[1] := exp( log_extinction[1] )
```

```
for (i in 1:NUM_INTERVALS) {
```

```
  index = i+1
```

```
  speciation_ls[i] ~ dnHalfCauchy( location=0.0, scale=speciation_global_scale )
```

```
  extinction_ls[i] ~ dnHalfCauchy( location=0.0, scale=extinction_global_scale )
```

```
  log_speciation[index] ~ dnNormal( mean=log_speciation[i], sd=speciation_ls[i] )
```

```
  log_extinction[index] ~ dnNormal( mean=log_extinction[i], sd=extinction_ls[i] )
```

```
  speciation[index] := exp( log_speciation[index] )
```

```
  extinction[index] := exp( log_extinction[index] )
```

```
}
```

```
times_speciation <- T.rootAge() * (1:NUM_INTERVALS) / (NUM_INTERVALS) * 0.8
```

```
times_extinction <- T.rootAge() * (1:NUM_INTERVALS) / (NUM_INTERVALS) * 0.8
```

```
rho <- T.ntips()/377
```

```
timetree ~ dnEpisodicBirthDeath(rootAge=T.rootAge(),
  lambdaRates=speciation, lambdaTimes=times_speciation,
  muRates=extinction, muTimes=times_extinction,
  rho=rho, samplingStrategy="uniform",
  condition="time", taxa=taxa)
```

```
timetree.clamp(T)
```