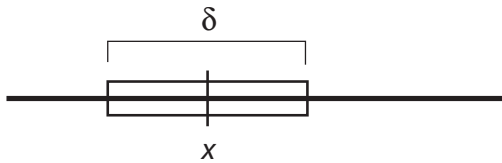


Sliding Window Proposal



New values are picked uniformly from a sliding window of size δ centered on x .

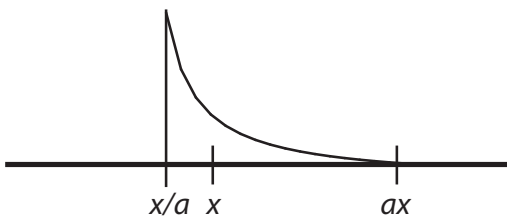
Tuning parameter: δ

Bolder proposals: increase δ

More modest proposals: decrease δ

Works best when the effect on the probability of the data is similar throughout the parameter range

Multiplier Proposal



New values are picked from the equivalent of a sliding window on the log-transformed x axis.

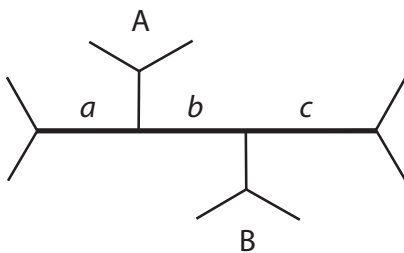
Tuning parameter: $\lambda = 2 \ln a$

Bolder proposals: increase λ

More modest proposals: decrease λ

Works well when changes in small values of x have a larger effect on the probability of data than changes in large values of x . Example: branch lengths.

LOCAL



Three internal branches - a , b , and c - are chosen at random. Their total length is changed using a multiplier with tuning parameter λ .

One of the subtrees A or B is picked at random.

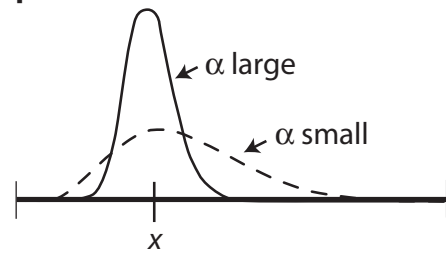
It is randomly reinserted on $a + b + c$ according to a uniform distribution

Bolder proposals: increase λ

More modest proposals: decrease λ

Changing λ has little effect on the boldness of the proposal

Dirichlet proposal



New values are picked from a Dirichlet (or Beta) distribution centered on x .

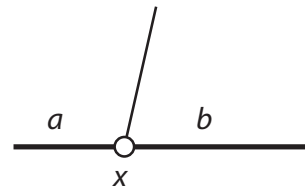
Tuning parameter: α

Bolder proposals: decrease α

More modest proposals: increase α

Works well for proportions, such as revmat and statefreqs.

Node Slider



Two adjacent branches a and b are chosen at random

The length of $a + b$ is changed using a multiplier with tuning parameter λ

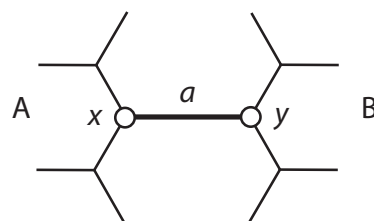
The node x is randomly inserted on $a + b$ according to a uniform distribution

Bolder proposals: increase λ

More modest proposals: decrease λ

The boldness of the proposal depends heavily on the uniform reinsertion of x , so changing λ may have limited effect

Extending TBR



An internal branch a is chosen at random

The length of a is changed using a multiplier with tuning parameter λ

The node x is moved, with one of the adjacent branches, in subtree A, one node at a time, each time the probability of moving one more branch is p (the extension probability).

The node y is moved similarly in subtree B.

Bolder proposals: increase p

More modest proposals: decrease p

Changing λ has little effect on the boldness of the proposal.