The data

AND/OR

0101... ATTG...
1101... TTGC...
0100... ATTC...

Phylogenetic characters   Fossil ages

Tripartite model components

Substitution model   Clock model   Tree and tree model

Bayes' theorem

likelihood

priors

$$P(\text{parameters} \mid \text{data, model}) = \frac{P(\text{data} \mid \text{parameters, model})\, P(\text{parameters} \mid \text{model})}{P(\text{data} \mid \text{model})}$$

posterior

marginal probability of the data

Putting everything together

posterior

probability of the character data given everything else*

probability of the timetree given the tree model

priors on fossil ages

priors on model parameters

marginal probability of the data

*the tree, the parameters and the tripartite model