We assume that, for a given observation i, we have that:

For our priors, we assume that:

where is the truncated stick-breaking prior, given by:

#----------------------------------------

FCD

* For

Where

* For

Where and

* For

Taking logs, this becomes:

For a group that does not exist yet, then:

Notice that in the expression for existing clusters, I ignore . Therefore, I will also ignore it here:

Taking logs, this becomes:

We can sample this from a categorical distribution