**Stochastic block model (SBM)**

We assume that the latent random variable , which indicates the latent membership of location i, is given by:

Similarly, we assume that the latent variable , which indicates the latent membership of species j, is given by:

Based on these two latent variables, we assume that:

Priors:

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

FCDs

Taking logs, this becomes:

We draw this variable from a multinomial distribution.

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where and

Where and

Where and