LDA Model

$$p(W, Z, \Theta) = \prod_{d=1}^{D} p(\theta_d) \prod_{n=1}^{N_d} p(z_{dn}|\theta_d) p(w_{dn}|z_{dn})$$

$$p(\theta_d) \sim \mathrm{Dir}(\alpha)$$

$$p(z_{dn}|\theta_d) = \theta_{dz_{dn}}$$

$$p(w_{dn}|z_{dn}) = \Phi_{z_{dn} w_{dn}}$$

Constraints:

$$\Phi_{tw} \geq 0$$

$$\sum_{w} \Phi_{tw} = 1$$