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# Assignment Title

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EL, RP

November 29, 2016

$$\phi_{d,n,k} \propto \beta_{W_{d,n,k}} * e^{\Psi(\gamma_k)}$$

$$\gamma_{d,k} = \alpha_k + \sum_{n=1}^{N_d} \phi_{d,n,k}$$

$$L(\gamma, \phi; \alpha, \beta) = \sum_{d=1}^C L_d(\gamma, \phi; \alpha, \beta)$$

$$\beta_{v,k} \propto \eta + \sum_{d=1}^C (w_v^{(d)} \phi_{d,v,k})$$

$$\alpha_{new} = \alpha_{old} - H^{-1}(\alpha_{old}) * g(\alpha_{old})$$

$$\phi$$

$$\beta$$

$$L$$

$$\alpha'$$

$$\alpha$$

$$\phi_{d_i,n,k}$$