

$$a_n = \log p(\alpha_n = 1) + E_{z_n|x_n}[\log p(x_n, z_n; \theta(\alpha_n = 1))] \\ - \log p(\alpha_n = 0) + E_{z_n|x_n}[\log p(x_n, z_n; \theta(\alpha_n = 0))]$$

