BRIEF ARTICLE

THE AUTHOR

$$b_u = b_i = 0$$

$$b_* = \frac{\sum_*(r_* - \mu)}{|R(*)|}$$

$$b_* \sim 4 \cdot \text{Beta}\left(a + \alpha \sum_* \frac{r_* - 1}{4} + \alpha \sum_* \frac{5 - r_*}{4}\right)$$

$$b_i = \frac{\sum_u (r_{ui} - \mu)}{\lambda_1 + |R(i)|}, b_u = \frac{\sum_i (r_{ui} - b_i - \mu)}{\lambda_2 + |R(u)|}$$

$$\min_{b_*} = \left[\sum_{u,i}(r_{ui} - \mu - b_u - b_i) + \lambda_3 \left(\sum_u b_u^2 + \sum_i b_i^2\right)\right]$$

$$b_i(t) = b_i + b_{i,\text{Bin}(t)}$$