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?Hawkes?

$$\tau(s) = \tau_0 + \sum_{s_i<s} E(s, s_i)$$

(1)

$E(s, s_i) \geq 0 \tau_0$ $\tau_0 = 0 E(s, s_i) = (s - s_i)^{-d} d$**?**
?
?$E(s, s_i) = \exp^{-d(s-s_i)}$**??**$s_1, s_2, ..., s_6 s'_1 s'_2$**??**$s'_1 s'_1 s'_2$**??**$s'_1 \tau^*(s'_1)$
$\tau^*(s'_1) = \sum_{i=1}^{6} E(s'_1, s_i) = \sum_{i=1}^{6} \exp^{-d(s'_1-s_i)}$
$= \exp^{-d(s'_1-s_6)} \sum_{i=1}^{5}(1 + \exp^{-d(s_6-s_i)})$
$= \exp^{-d(s'_1-s_6)} \tau^*(s_6)$
$s'_1 s_6 s s s u s t$

$$\tau(u, t, s) = \sum_{s_i<s} \exp^{-d(s-s_i)} = \exp^{-d(s-s_{last})} \tau(s_{last})$$

(2)

$\tau_0 = 0 s_{last} s$
$< u, m >$

$$\hat{y}^s_{umt} = w^s_{ut} \mathbf{P}_u^\top \mathbf{T}_t^{\mathcal{P}} + w_{mt} \mathbf{Q}_m^\top \mathbf{T}_t^{\mathcal{Q}}$$

(3)

$w^s_{u,t} < u, t, s > w_{i,t} < m, t > ust < u, t, s > w^s_{ut} mt < m, t > usttw^s_{ut} w_{mt} w^s_{ut}$**??**

$$w^s_{ut} = 1 + \log_{10}(1 + 10^{a^{\mathcal{P}}} \cdot ||\tau(u, t, s)||)$$

(4)

$\alpha^{\mathcal{P}} ||\tau(u, t, s)|| ||\tau(u, t, s)|| = \frac{\tau(u,t,s)}{\sum_{t \in \mathcal{T}_u} \tau(u,t,s)} \mathcal{T}_u u ||\tau(u, t, s)|| w^s_{ut} ||\tau(u, t, s)|| 0 w^s_{ut} = 1 ust w_{i,tm}$**?**

$$w_{mt} = 1 + \log_{10}(1 + 10^{a^{\mathcal{Q}}} \cdot |||\hat{\mathbf{Y}}_{mt}|||)$$

(5)

$\alpha^{\mathcal{Q}} |\hat{\mathbf{Y}}_{mt}| mt$
??$\mathbf{P}_u^\top \mathbf{T}_t^{\mathcal{P}} \mathbf{Q}_m^\top \mathbf{T}_t^{\mathcal{Q}}$
[1]
TAPITF
$\hat{\mathbf{Y}} \hat{\mathbf{Y}} k \delta \lambda$
$\mathbf{P} \in R^{N \times K} \mathbf{Q} \in R^{M \times K} \mathbf{T}^{\mathcal{P}} \in R^{T \times K}, \mathbf{T}^{\mathcal{Q}} \in R^{T \times K}$
$\hat{\mathbf{Y}} y =< u, m, t, s >$-
-
w^s_{ut}-