

$$\exp \left\{ \sum_{i=1}^{N-1} \sum_{j=i+1}^N x_{ij} \left[ \sum_{(a,b) \in \text{AA pairs}} \theta_{ab} \phi_{ab}(y_i, y_j) \right. \right. \\ \left. \left. + \theta_{\text{dist}}(j-i) + \theta_{\text{seqlen}} \phi_{\text{seqlen}}(y) \right] \right. \\ \left. + \sum_{i=1}^{N-2} \sum_{j=i+1}^{N-1} \sum_{k=j+1}^{N-2} \sum_{t=0}^3 \theta_t \mathbb{1}\{x_{ij} + x_{ik} + x_{jk} = t\} \right\}$$