

$$\mathbb{E}_{\{i,j\} \rightarrow \{k\}} \left[ \mathbf{a}_k \alpha_i + \mathbf{a}_k \alpha_j + \mathbf{t}_k \tau_i + \mathbf{t}_k \tau_j, \right. \\
\left. \mathbf{y}_k \eta_i + \frac{\mathbf{y}_k \eta_j}{\mathcal{A}_i} + \frac{\mathbf{x}_k \xi_i}{\mathcal{A}_j} + \frac{(\mathbf{1} - T_k) \eta_j \xi_i}{\hbar} + \mathbf{x}_k \xi_j, \mathbf{1} + \left( 2 \mathbf{a}_k T_k \eta_j \xi_i + \frac{\hbar \mathbf{x}_k \mathbf{y}_k \eta_j \xi_i}{\mathcal{A}_i \mathcal{A}_j} + \right. \right. \\
\left. \left. \frac{(\mathbf{1} - 3 T_k) \mathbf{y}_k \eta_j^2 \xi_i}{2 \mathcal{A}_i} + \frac{(\mathbf{1} - 3 T_k) \mathbf{x}_k \eta_j \xi_i^2}{2 \mathcal{A}_j} + \frac{(\mathbf{1} - 4 T_k + 3 T_k^2) \eta_j^2 \xi_i^2}{4 \hbar} \right) \epsilon + \mathbf{0} [\epsilon]^2 \right]$$