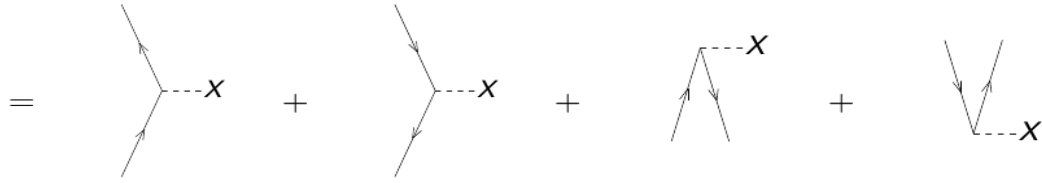


$$\hat{F}_N = \sum_{ab} f_{ab} \{a_a^\dagger a_b\} + \sum_{ij} f_{ij} \{a_i^\dagger a_j\} + \sum_{ia} f_{ia} \{a_i^\dagger a_a\} + \sum_{ia} f_{ai} \{a_a^\dagger a_i\}$$



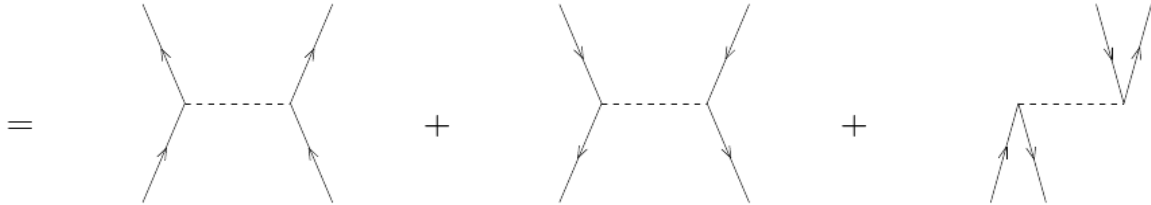
0

0

-1

+1

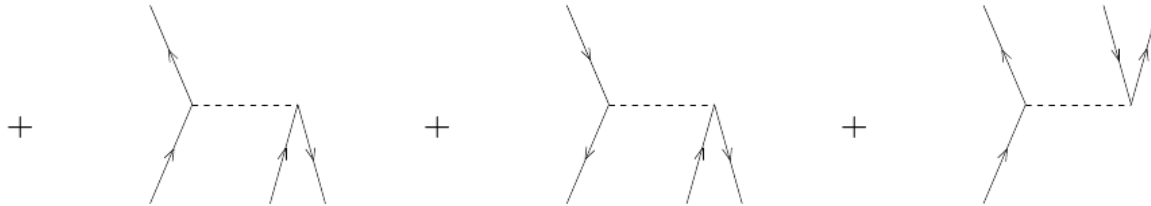
$$\begin{aligned} \hat{V}_N = & \frac{1}{4} \sum_{abcd} \langle ab || cd \rangle \{a_a^\dagger a_b^\dagger a_c a_d\} + \frac{1}{4} \sum_{ijkl} \langle ij || kl \rangle \{a_i^\dagger a_j^\dagger a_l a_k\} + \sum_{iabj} \langle ia || bj \rangle \{a_i^\dagger a_a^\dagger a_j a_b\} \\ & + \frac{1}{2} \sum_{aibc} \langle ai || bc \rangle \{a_a^\dagger a_i^\dagger a_c a_b\} + \frac{1}{2} \sum_{ijka} \langle ij || ka \rangle \{a_i^\dagger a_j^\dagger a_a a_k\} + \frac{1}{2} \sum_{abci} \langle ab || ci \rangle \{a_a^\dagger a_b^\dagger a_i a_c\} \\ & + \frac{1}{2} \sum_{iajk} \langle ia || jk \rangle \{a_i^\dagger a_a^\dagger a_k a_j\} + \frac{1}{4} \sum_{abij} \langle ab || ij \rangle \{a_a^\dagger a_b^\dagger a_j a_i\} + \frac{1}{4} \sum_{ijab} \langle ij || ab \rangle \{a_i^\dagger a_j^\dagger a_b a_a\} \end{aligned}$$



0

0

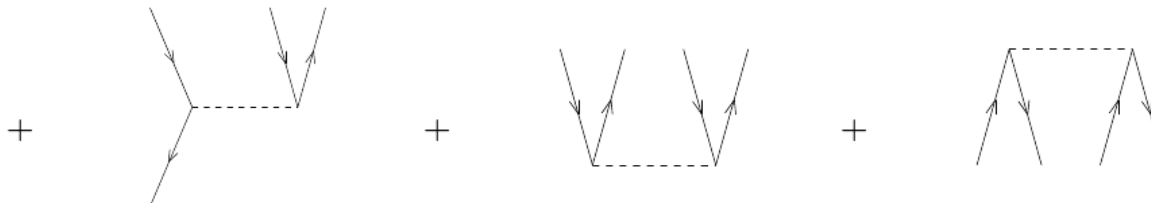
0



-1

-1

+1



+1

+2

-2