Equations for Moller-Plesset Theory of Order 3

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January 2023

1 Diagram Details

- number of nodes (order) is 3
- number of diagrams in order is 3
- number of node pairs per diagram is 3
- number of connections (lines) per diagram is 6

2 Equations

$(\mathbf{2}\ \ \mathbf{2}\ \ \mathbf{2}) \rightarrow (\mathbf{0}\ \ \mathbf{2}\ \ \mathbf{0})\uparrow \qquad (\mathbf{2}\ \ \mathbf{0}\ \ \mathbf{2})\downarrow$

$$(-1)^{4+2}\ \ (2)^{-3}\ \ \frac{\langle ab\|ij\rangle\ \langle ij\|kl\rangle\ \langle kl\|ab\rangle}{(\epsilon_i+\epsilon_j-\epsilon_a-\epsilon_b)(\epsilon_k+\epsilon_l-\epsilon_a-\epsilon_b)}$$

$(\mathbf{2}\ \ \mathbf{2}\ \ \mathbf{2}) \rightarrow (\mathbf{1}\ \ \mathbf{1}\ \ \mathbf{1})\uparrow \qquad (\mathbf{1}\ \ \mathbf{1}\ \ \mathbf{1})\downarrow$

$$(-1)^{3+3}\ \ (2)^{0}\ \ \frac{\langle ab\|ij\rangle\ \langle ic\|ak\rangle\ \langle jk\|bc\rangle}{(\epsilon_i+\epsilon_j-\epsilon_a-\epsilon_b)(\epsilon_j+\epsilon_k-\epsilon_b-\epsilon_c)}$$

$(\mathbf{2}\ \ \mathbf{2}\ \ \mathbf{2}) \rightarrow (\mathbf{2}\ \ \mathbf{0}\ \ \mathbf{2})\uparrow \qquad (\mathbf{0}\ \ \mathbf{2}\ \ \mathbf{0})\downarrow$

$$(-1)^{2+2}\ \ (2)^{-3}\ \ \frac{\langle ab\|ij\rangle\ \langle cd\|ab\rangle\ \langle ij\|cd\rangle}{(\epsilon_i+\epsilon_j-\epsilon_a-\epsilon_b)(\epsilon_i+\epsilon_j-\epsilon_c-\epsilon_d)}$$