

$$\langle \Phi_i^a | \hat{H}_0 | \Phi_j^b \rangle :$$

$$\langle a | \hat{H}_0 | b \rangle : \sum_b^a \cdots x \quad \langle j | \hat{H}_0 | i \rangle : \sum_j^i \cdots x \quad \langle k | \hat{H}_0 | k \rangle : \bigcirc^k \cdots x$$

$$\langle \Phi_i^a | \hat{H}_I | \Phi_j^b \rangle :$$

$$\langle a j | \hat{V} | i b \rangle_{AS} : \begin{array}{c} a \quad i \\ \diagdown \quad \diagup \\ \diagup \quad \diagdown \\ b \quad j \end{array} \cdots + \begin{array}{c} a \quad i \\ \diagup \quad \diagdown \\ \diagdown \quad \diagup \\ b \quad j \end{array} \cdots$$

$$\langle a k | \hat{V} | b k \rangle_{AS} : \begin{array}{c} a \\ \diagdown \quad \diagup \\ \diagup \quad \diagdown \\ b \end{array} \cdots \bigcirc^k + \begin{array}{c} a \quad k \\ \diagdown \quad \diagup \\ \diagup \quad \diagdown \\ b \end{array} \cdots$$

$$\langle j k | \hat{V} | i k \rangle_{AS} : \begin{array}{c} i \\ \diagdown \quad \diagup \\ \diagup \quad \diagdown \\ j \end{array} \cdots \bigcirc^k + \begin{array}{c} k \\ \diagup \quad \diagdown \\ \diagdown \quad \diagup \\ j \end{array} \cdots$$

$$\langle k l | \hat{V} | k l \rangle_{AS} : \bigcirc^k \cdots \bigcirc^l + \begin{array}{c} k \\ \diagup \quad \diagdown \\ \diagdown \quad \diagup \\ l \end{array} \cdots$$