

$$-\Sigma_{12} = \delta_{12} \left(\text{Diagram 1} \right) + \text{Diagram 2} + \text{Diagram 3} + \text{Diagram 4} + \dots$$

The equation shows the sum of several Feynman diagrams representing the self-energy $-\Sigma_{12}$. The first term is δ_{12} multiplied by a large parenthesis containing a diagram. This is followed by three more diagrams, each preceded by a plus sign, and an ellipsis indicating further terms.

Diagram 1 (inside the parenthesis): A horizontal line with two vertices labeled 1 and 2. From vertex 2, a vertical wavy line extends upwards to a vertex labeled 3. From vertex 3, a circular loop with two arrows (one clockwise, one counter-clockwise) connects back to vertex 3.

Diagram 2: A horizontal line with two vertices labeled 1 and 2. A wavy line connects vertex 1 to vertex 2.

Diagram 3: A horizontal line with two vertices labeled 1 and 2. From vertex 1, a wavy line extends upwards to a vertex labeled 3. From vertex 2, a wavy line extends upwards to a vertex labeled 4. A loop with two arrows connects vertices 3 and 4.

Diagram 4: A horizontal line with four vertices labeled 1, 4, 3, and 2 from left to right. Wavy lines connect vertex 1 to 4, 4 to 3, and 3 to 2. Arrows on the horizontal segments point from 1 to 4, 4 to 3, and 3 to 2.