

$$G_{\sigma\sigma';1234}^{\text{conn};qkk'} =$$

The diagram illustrates the connected Green's function $G_{\sigma\sigma';1234}^{\text{conn};qkk'}$ as a sum of three terms, each representing a different Feynman diagram. The diagrams are connected by minus, plus, and minus signs respectively.

- First Diagram (Tree Level):** A diagram with two vertices connected by a wavy line. The left vertex has two external lines labeled 1 and 2. The right vertex has two external lines labeled 4 and 3. The wavy line is labeled with indices a, b at the left vertex and c, d at the right vertex.
- Second Diagram (One Loop):** A diagram with two vertices connected by a wavy line. The left vertex has two external lines labeled 1 and 2. The right vertex has two external lines labeled 4 and 3. The wavy line is labeled with indices a, b at the left vertex and c, d at the right vertex. A bubble is attached to the wavy line.
- Third Diagram (Two Loop):** A diagram with two vertices connected by a wavy line. The left vertex has two external lines labeled 1 and 2. The right vertex has two external lines labeled 4 and 3. The wavy line is labeled with indices a, b at the left vertex and c, d at the right vertex. Two bubbles are attached to the wavy line.