

$$\Sigma^k =$$

The image displays three Feynman diagrams representing the self-energy Σ^k of a fermion line.

Diagram 1 (Left): A fermion line with incoming momentum $k; 1$ and outgoing momentum $k; 2$ is connected by a wavy line labeled $\mathcal{U}_{1234}^{q=0}$ to a fermion loop.

Diagram 2 (Middle): A fermion line with incoming momentum $k; 1$ and outgoing momentum $k; 2$ is connected by a wavy line labeled \mathcal{U}_{a1bc}^q to a triangle loop. The triangle loop consists of a fermion line with momentum $k; 2$ and a fermion line with momentum $k; 1$. The vertex on the right is labeled γ_{ach2}^{qk} .

Diagram 3 (Right): A fermion line with incoming momentum $k; 1$ and outgoing momentum $k; 2$ is connected by a wavy line labeled \mathcal{U}_{a1bc}^q to a chain of two loops. The first loop is labeled χ_{aced}^q and the second loop is labeled \mathcal{U}_{defg}^q . The vertex on the right is labeled γ_{gfh2}^{qk} .