

The diagram shows the expansion of a self-energy loop (a circle with two external solid lines and two external dashed lines) into a series of diagrams. The expansion is given by:

$$\begin{aligned}
 & \text{Loop Diagram} \equiv \text{Diagram 1} + \text{Diagram 2} + \text{Diagram 3} + \dots \\
 & + \Sigma^*
 \end{aligned}$$

The diagrams in the series are:

- Diagram 1:** A solid line with a single vertex (black dot) and a dashed line with a single vertex (black dot).
- Diagram 2:** A solid line with two vertices and a dashed line with two vertices, connected by a single dashed arc.
- Diagram 3:** A solid line with three vertices and a dashed line with three vertices, connected by two dashed arcs.
- Diagram 4:** A solid line with four vertices and a dashed line with four vertices, connected by three dashed arcs.
- Diagram 5:** A solid line with two vertices and a dashed line with two vertices, connected by a double dashed line.

The symbol  $\Sigma^*$  is placed below the fifth diagram, indicating a summation of higher-order terms.