

$$\partial_t \Gamma_k[\bar{g}, 0] = \frac{1}{2} \left( \text{Diagram 1} + \text{Diagram 2} - \text{Diagram 3} + \text{Diagram 4} \right)$$

The equation shows the time derivative of the effective action  $\Gamma_k$  at zero source, expressed as a sum of four Feynman diagrams, each multiplied by a factor of  $\frac{1}{2}$ .

- Diagram 1:** A circle with two concentric lines (a thick boundary) and a vertex at the top represented by a circle with an 'X' inside.
- Diagram 2:** A dashed circle with a vertex at the top represented by a circle with an 'X' inside.
- Diagram 3:** A circle with a vertex at the top represented by a circle with an 'X' inside, and two external lines extending from the left and right sides.
- Diagram 4:** A circle with a wavy (stippled) boundary and a vertex at the top represented by a circle with an 'X' inside.