

$$\partial_t \Gamma_k[\bar{g}, 0] = \frac{1}{2} \left(\text{Diagram 1} \right) - \left(\text{Diagram 2} \right) + \frac{1}{2} \left(\text{Diagram 3} \right) - \left(\text{Diagram 4} \right) + \frac{1}{2} \left(\text{Diagram 5} \right) - \left(\text{Diagram 6} \right)$$

The equation shows the time derivative of the effective action, $\partial_t \Gamma_k[\bar{g}, 0]$, expressed as a sum of six Feynman diagrams. Each diagram features a central vertex, represented by a circle with an 'X' inside, connected to a loop. The diagrams are distinguished by their loop styles and the presence of arrows:

- Diagram 1:** A double-line solid circle loop with an arrow pointing clockwise.
- Diagram 2:** A dotted circle loop with an arrow pointing clockwise.
- Diagram 3:** A dashed circle loop with an arrow pointing clockwise.
- Diagram 4:** A solid circle loop with an arrow pointing clockwise.
- Diagram 5:** A solid circle loop with a wavy (scalar) line boundary.
- Diagram 6:** A dotted circle loop with an arrow pointing clockwise.