

$$B_g =$$

The image displays three Feynman diagrams representing the gluon self-energy  $B_g$ , summed together. Each diagram features an incoming gluon line with momentum  $k_3$  and an outgoing gluon line with momentum  $k_1$ . The diagrams are connected by plus signs, indicating they are summed.

- Diagram 1:** A loop diagram with two gluon lines (dashed) and two ghost lines (solid). The vertices are labeled  $\Gamma_g^{(2)}$  and  $\Gamma_g^{(1)}$ .
- Diagram 2:** A loop diagram with two gluon lines (dashed) and two ghost lines (solid). The vertices are labeled  $\Gamma_g^{(2)}$  and  $\Gamma_g^{(2)}$ . A vertical gluon line (dashed) connects the two vertices.
- Diagram 3:** A loop diagram with two gluon lines (dashed) and two ghost lines (solid). The vertices are labeled  $\Gamma_g^{(3)}$  and  $\Gamma_g^{(1)}$ . A loop of two gluon lines (dashed) connects the two vertices.