

$$g_3 \rightarrow g_3 + \hbar \left( \frac{1}{2} g_3^3 - g_3^3 L F_{3,-1} [m_3] - \frac{1}{4} \sum_p g_3^3 L F_{2,0} [m_d^p] + \frac{1}{6} \sum_p g_3^3 L F_{3,-1} [m_d^p] - \right. \\ \left. \frac{1}{2} \sum_p g_3^3 L F_{2,0} [m_q^p] + \frac{1}{3} \sum_p g_3^3 L F_{3,-1} [m_q^p] - \frac{1}{4} \sum_p g_3^3 L F_{2,0} [m_u^p] + \frac{1}{6} \sum_p g_3^3 L F_{3,-1} [m_u^p] \right)$$