

$$F_{\text{tr}F^2}^{\text{tree}}(1^-, 2^-, 3^+) = \frac{\langle 12 \rangle^3}{\langle 23 \rangle \langle 31 \rangle}, \quad F_{\text{tr}F^2}^{\text{tree}}(1^+, 2^+, 3^+) = \frac{q^4}{[12][23][31]}, \quad q^2 = m_H^2$$