

$$R_V^q = R_A^q = 1 + \frac{\alpha_s(M_Z)}{\pi} + 1.409 \frac{\alpha_s^2}{\pi^2} - 12.77 \frac{\alpha_s^3}{\pi^3} - 80.0 \frac{\alpha_s^4}{\pi^4} + Q_q^2 \left[\frac{3}{4} - \frac{\alpha_s}{4\pi} - \left(1.106 + \frac{3}{32} Q_q^2 \right) \frac{\alpha}{\pi} \right] \frac{\alpha(M_Z)}{\pi}$$