
2. Verify that the ratio of $\Gamma(\pi^- \to \mu^- \bar{\nu}_\mu)$ and $\Gamma(\pi^- \to e^- \bar{\nu}_e)$ can be understood with the universality using the predicted ratio

$$\frac{\Gamma(\pi^- \to e^- \bar{\nu}_e)}{\Gamma(\pi^- \to \mu^- \bar{\nu}_\mu)} = \left(\frac{m_e}{m_\mu}\right)^2 \frac{(1 - m_e^2/m_\mu^2)^3}{(1 - m_\mu^2/m_e^2)^2}.$$  \hspace{0.5cm} (1)

3. Show that $\delta_L$ is given by $2\text{Re}(\epsilon)$ to the leading order in $\epsilon$. 