HW #5 (129A), due Nov 15, 4pm

1. Reproduce the curve for the data from CPLEAR measurement of the asymmetry in K^0-$\overline{K}^0$ oscillation in *Phys. Lett.* **B 444**, 38 (1998), `http://www.elsevier.com/IVP/03702693/444/38/`. You can assume CP.

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

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

3. Show that δ_L is given by $2\Re e(\epsilon)$ to the leading order in ϵ.