

$$E_1 = \epsilon_0 e^{-2\lambda T} \Rightarrow \frac{\epsilon_0}{\epsilon_1} = e^{2\lambda T} \Rightarrow \frac{\epsilon_0 - \epsilon_1}{\epsilon_1} = e^{2\lambda T} - 1 \Rightarrow \frac{Q_1}{\epsilon_1} = e^{2\lambda T} - 1$$

$$E_2 = \epsilon_1 e^{-2\lambda T} \Rightarrow \frac{\epsilon_1}{\epsilon_2} = e^{2\lambda T} \Rightarrow \frac{\epsilon_1 - \epsilon_2}{\epsilon_2} = e^{2\lambda T} - 1 \Rightarrow \frac{Q_2}{\epsilon_2} = e^{2\lambda T} - 1$$

$$E_3 = \epsilon_2 e^{-2\lambda T} \Rightarrow \frac{\epsilon_2}{\epsilon_3} = e^{2\lambda T} \Rightarrow \frac{\epsilon_2 - \epsilon_3}{\epsilon_3} = e^{2\lambda T} - 1 \Rightarrow \frac{Q_3}{\epsilon_3} = e^{2\lambda T} - 1$$

$$\frac{Q_1}{\epsilon_1} = \frac{Q_2}{\epsilon_2} \Rightarrow \frac{Q_1}{Q_2} = \frac{\epsilon_1}{\epsilon_2}$$

$$\frac{Q_2}{\epsilon_2} = \frac{Q_3}{\epsilon_3} \Rightarrow \frac{Q_2}{Q_3} = \frac{\epsilon_2}{\epsilon_3}$$

$$\left. \begin{aligned} \frac{Q_1}{Q_2} &= \frac{Q_2}{Q_3} \Rightarrow Q_2^2 = Q_1 Q_3 \\ \frac{Q_1}{Q_2} &= \frac{Q_2}{Q_3} \end{aligned} \right\} Q_2 = \sqrt{Q_1 Q_3}$$