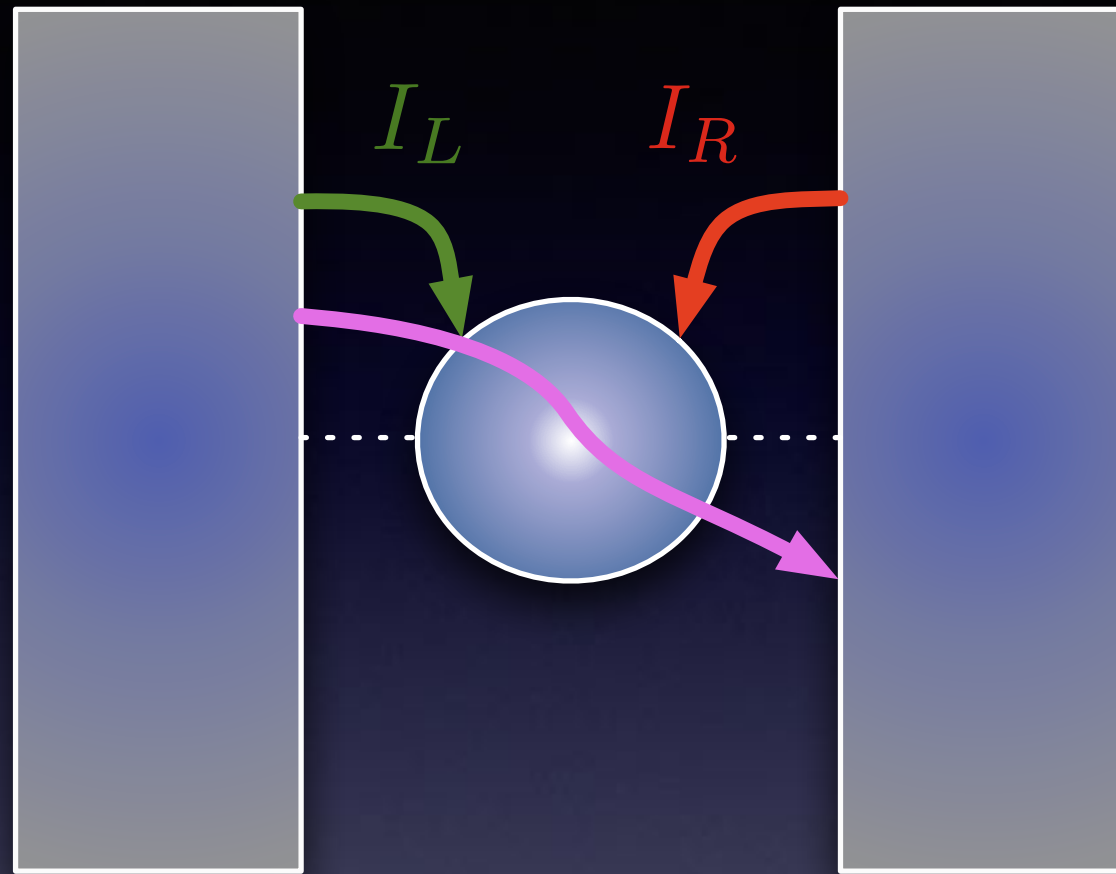


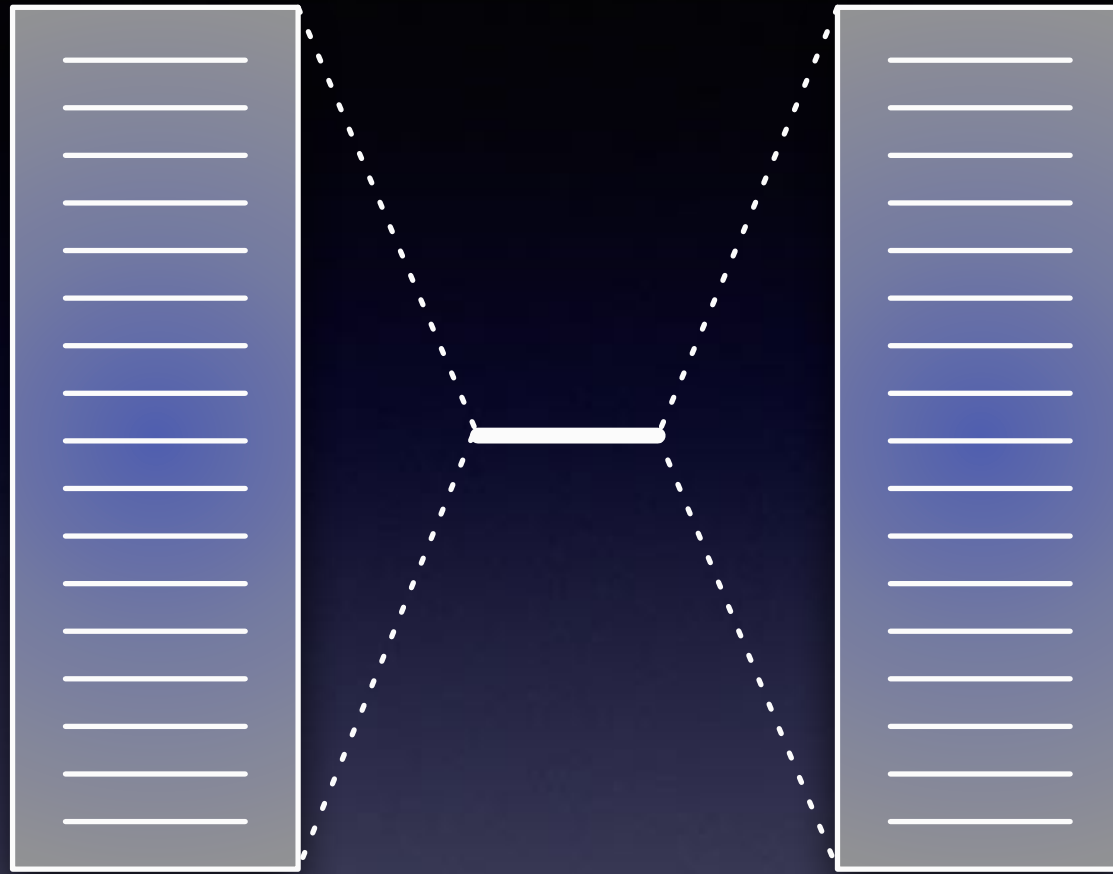
# Molecular Electronic Devices



$$I_{\text{tot}} = \frac{1}{2} (I_L - I_R)$$

We'll be studying the current (**left**, **right**, and **total**).

# Landauer Model



$$\hat{H} = \sum_{k \in L} \epsilon_k \hat{a}_k^\dagger \hat{a}_k + \epsilon_0 \hat{a}_0^\dagger \hat{a}_0 + \sum_{k \in R} \epsilon_k \hat{a}_k^\dagger \hat{a}_k$$

$$+ \sum_{k \in L} t_k \left( \hat{a}_0^\dagger \hat{a}_k + \hat{a}_k^\dagger \hat{a}_0 \right) + \sum_{k \in R} t_k \left( \hat{a}_0^\dagger \hat{a}_k + \hat{a}_k^\dagger \hat{a}_0 \right)$$