

# Quantum Information with Solid-State Devices

VO 141.A55

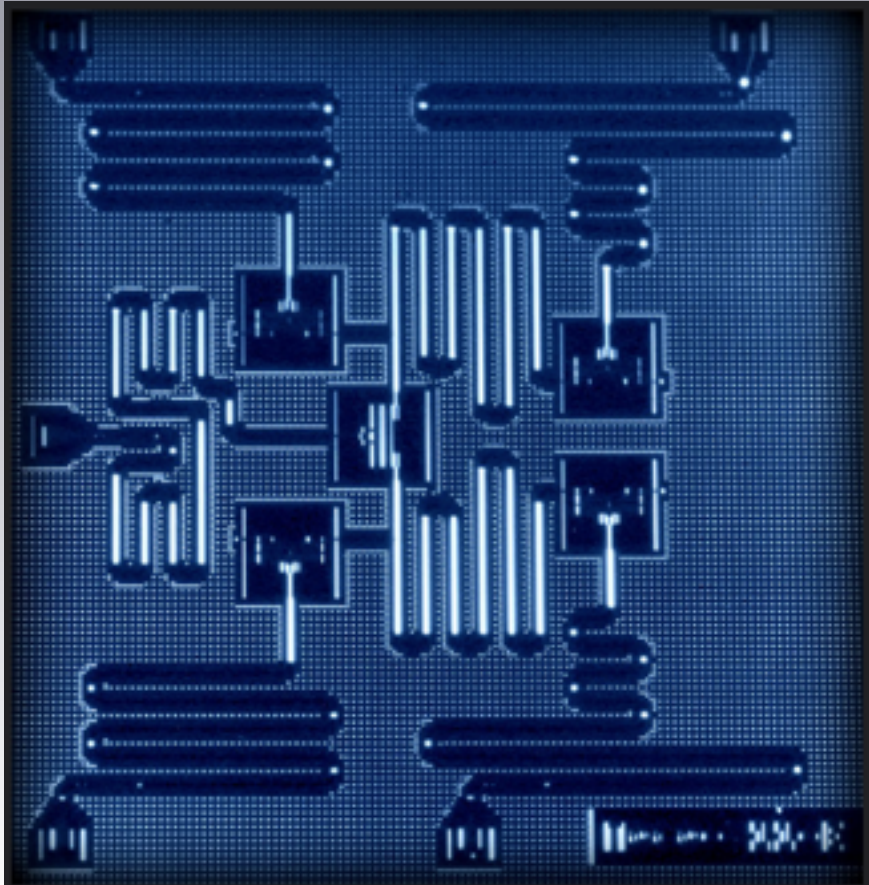
SS2016

Dr. Johannes Majer

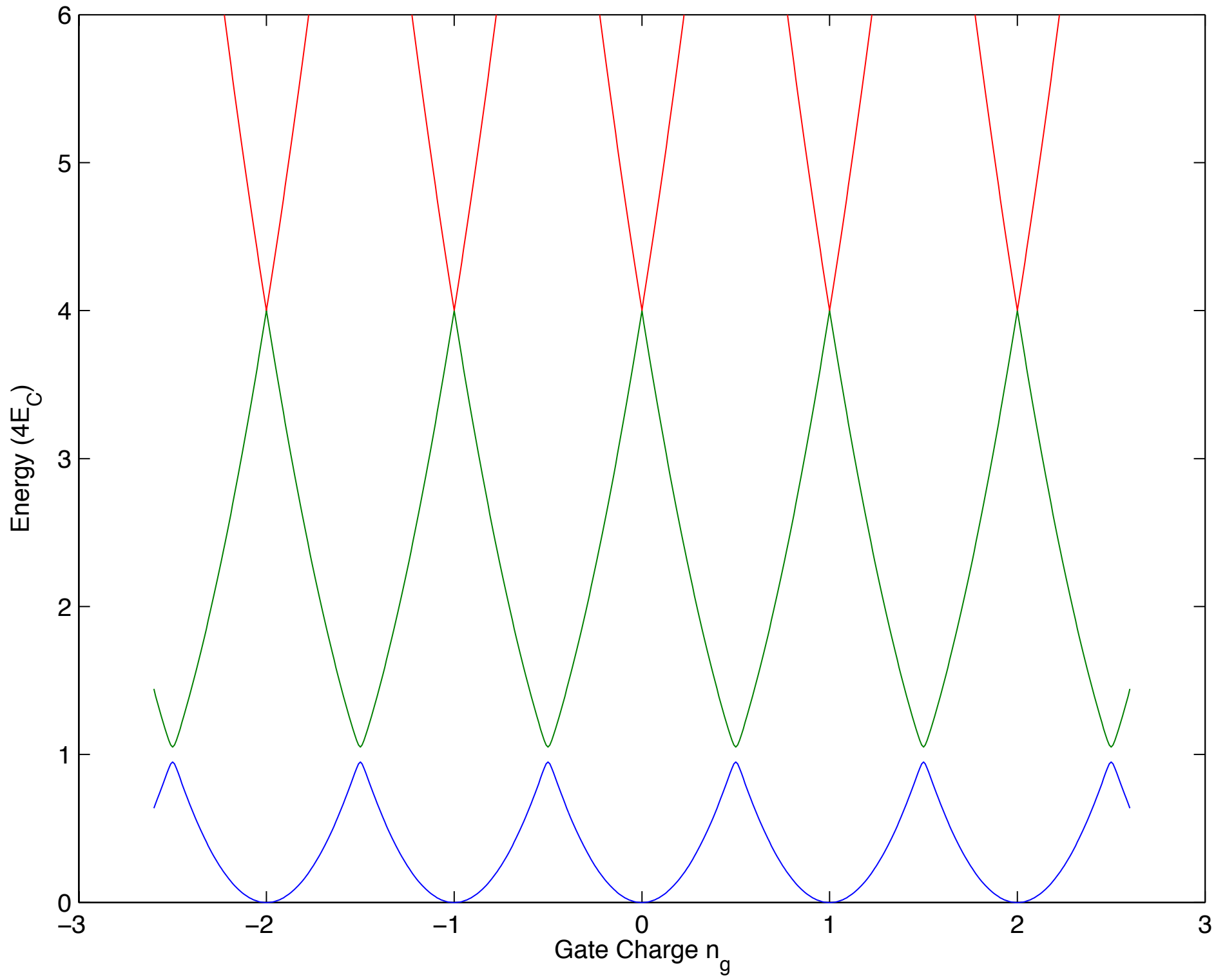
Lecture 10



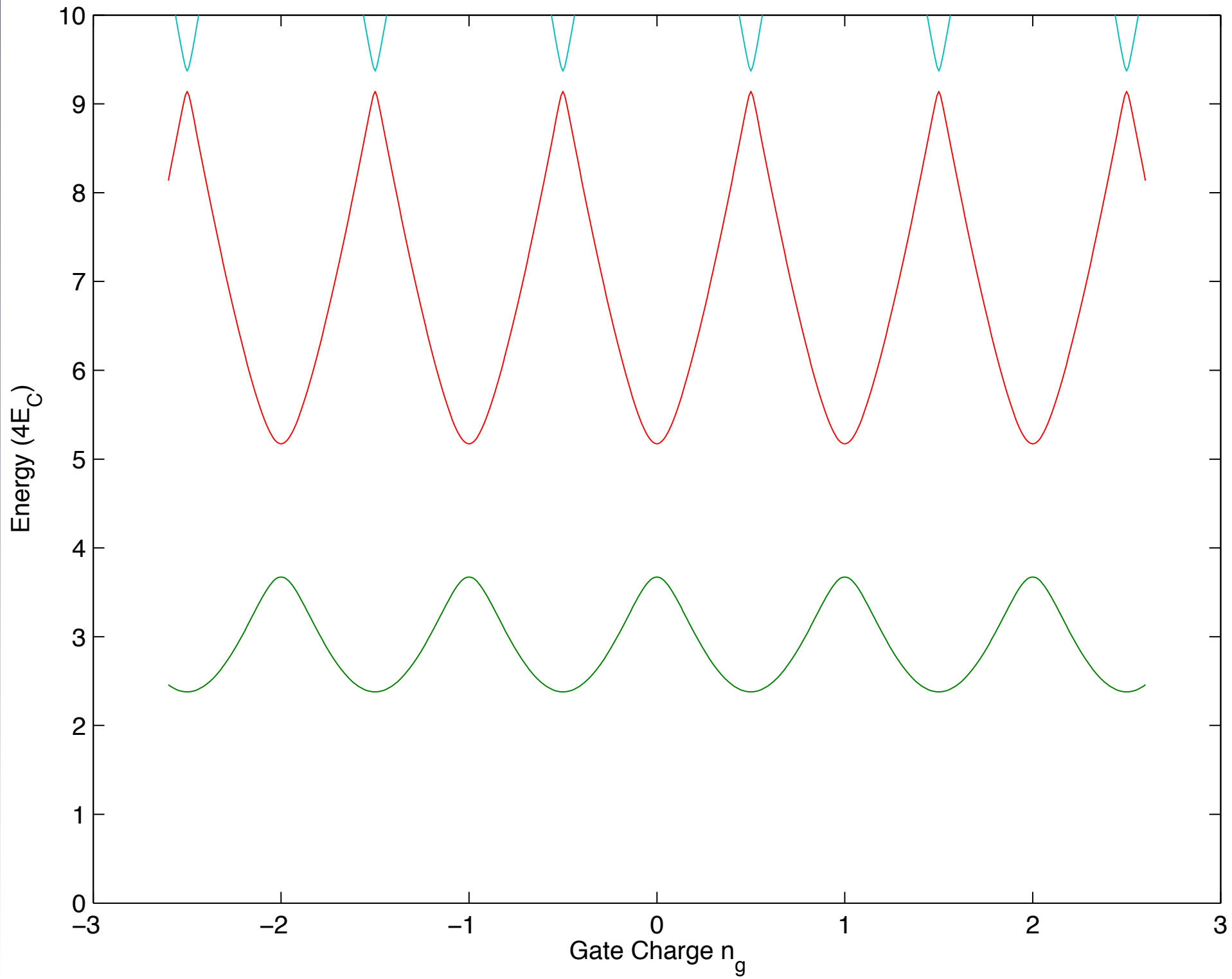
# Transmon Qubit Resonator



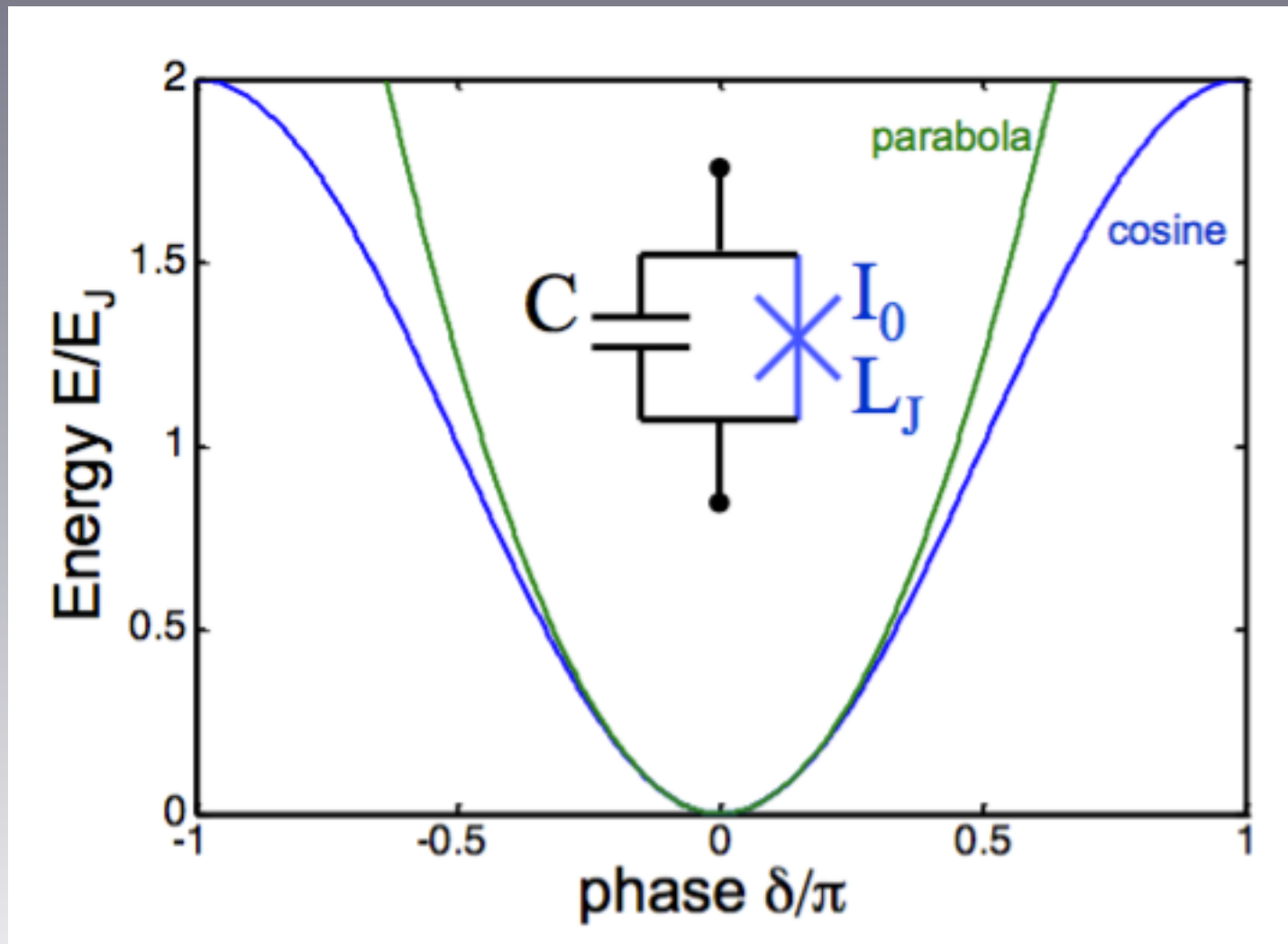
$$E_J/E_C = 0.1$$



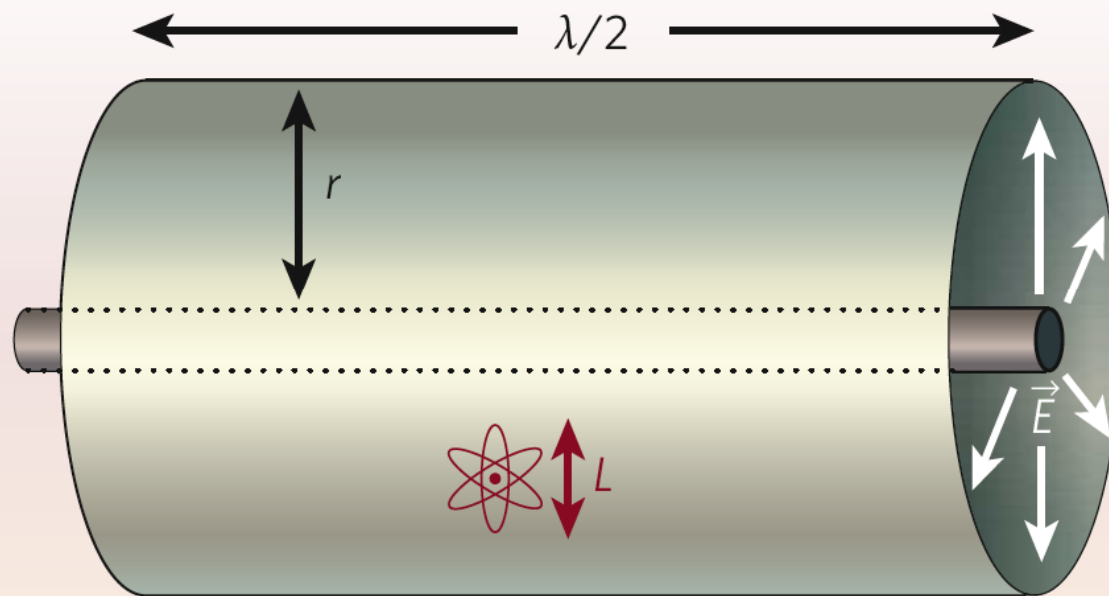
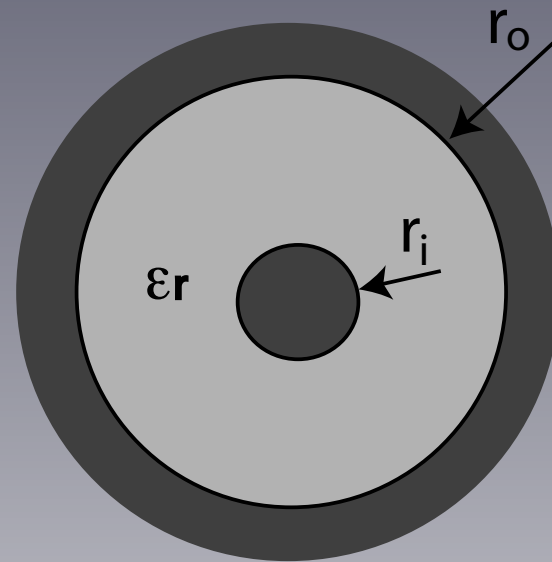
$$E_J/E_C=4$$



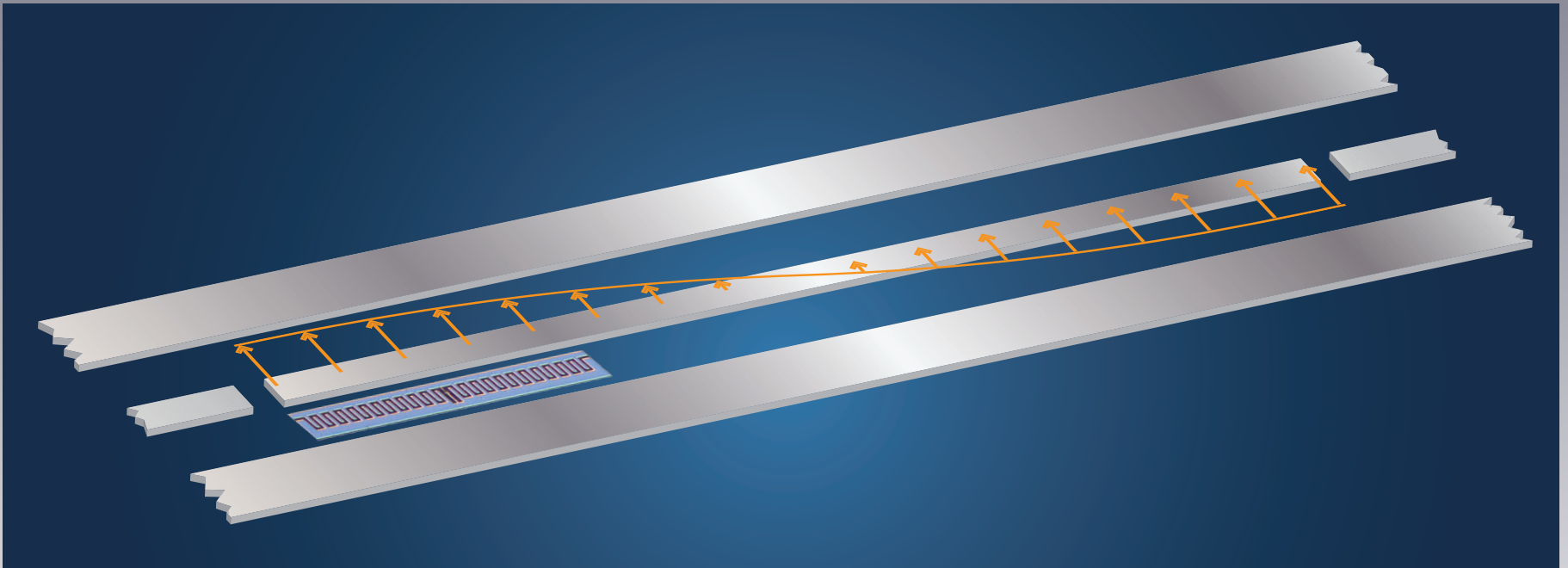
# Transmon



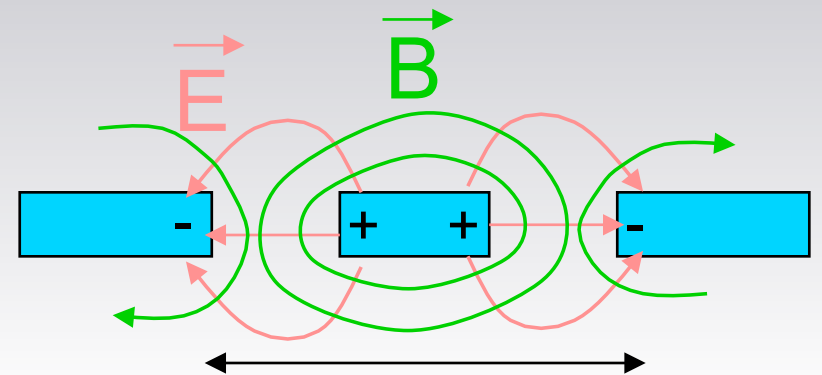
# Coaxial Line



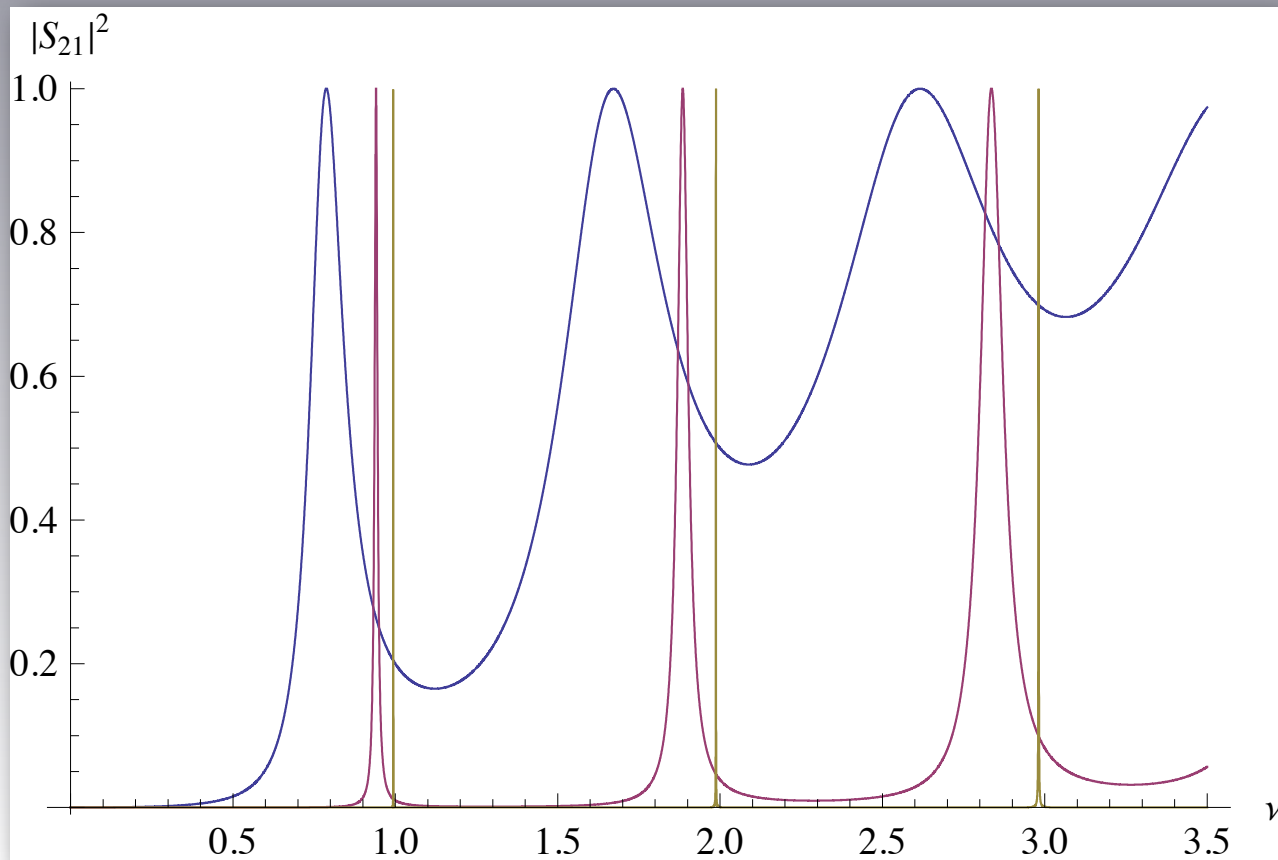
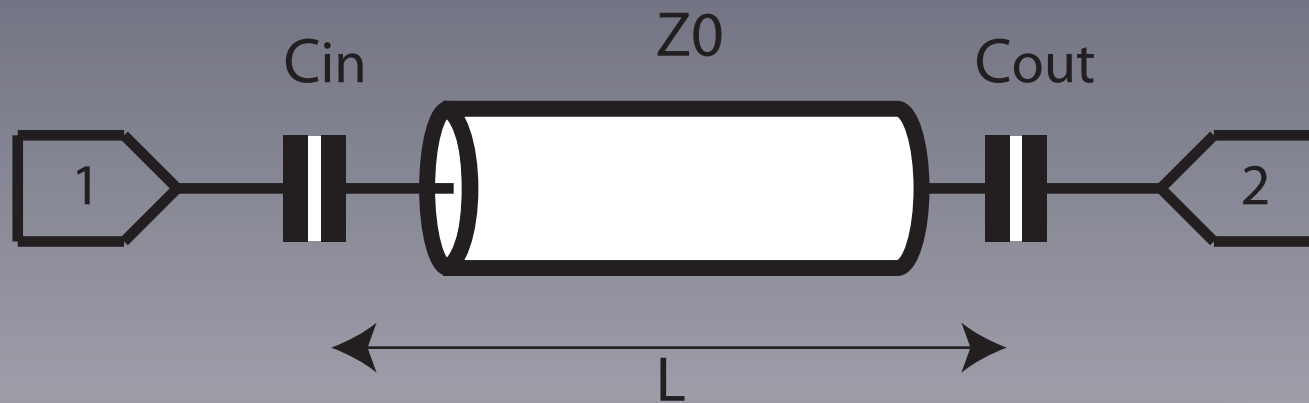
# Transmission Line Resonator



Coplanar Waveguide



# Transmission Line Resonator





# Superconducting Resonator

