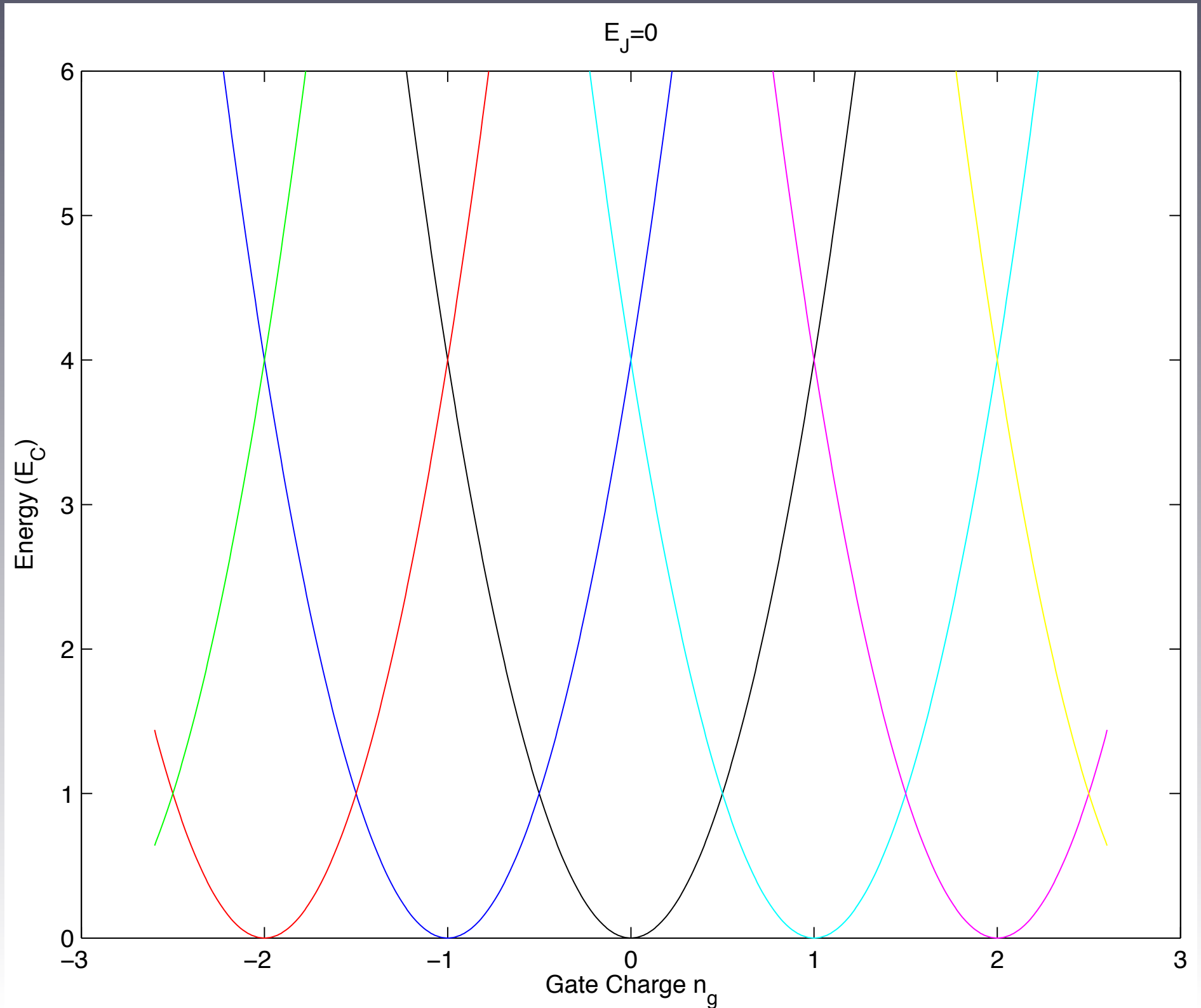
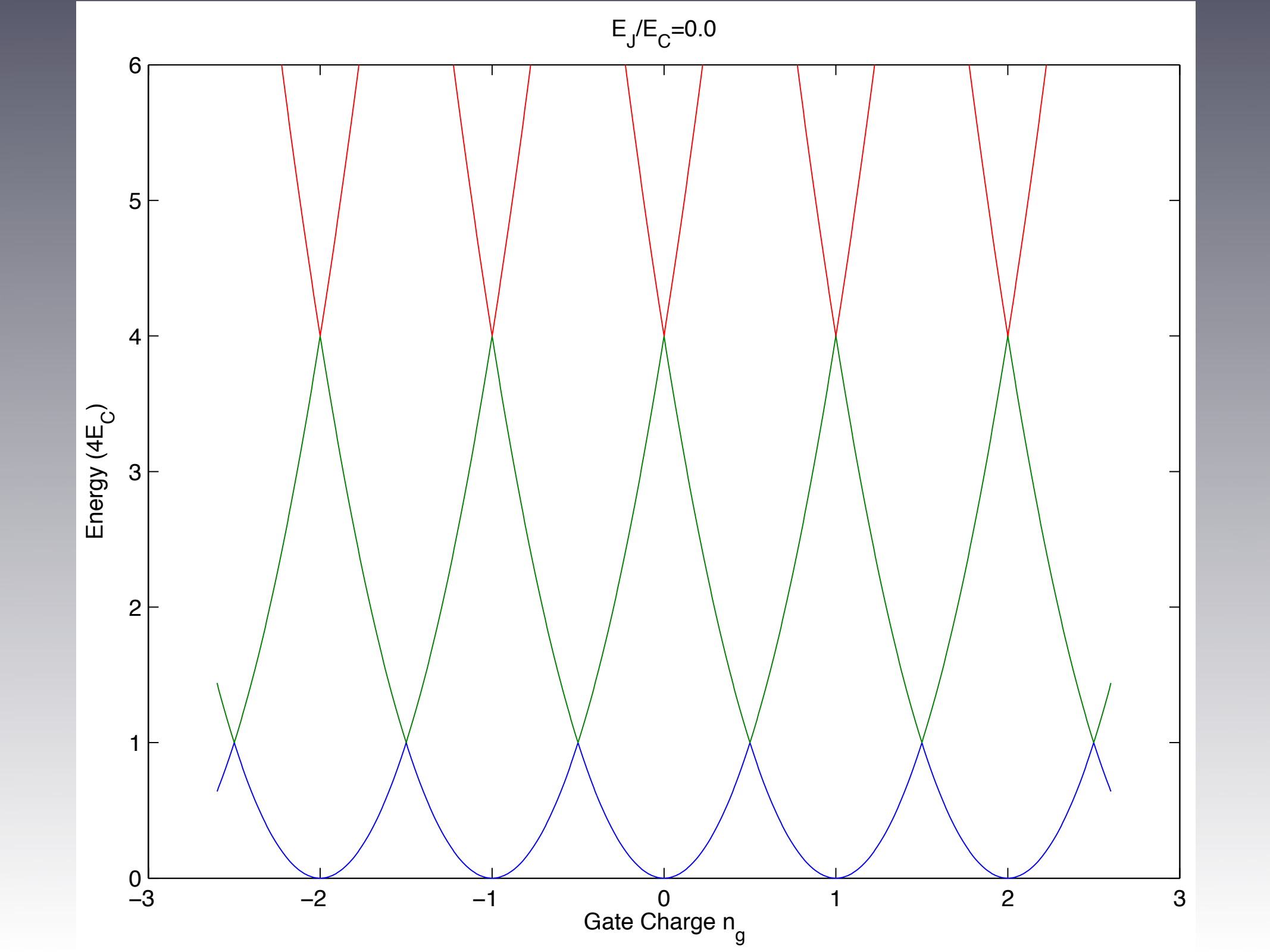
Quantum Information with Solid-State Devices

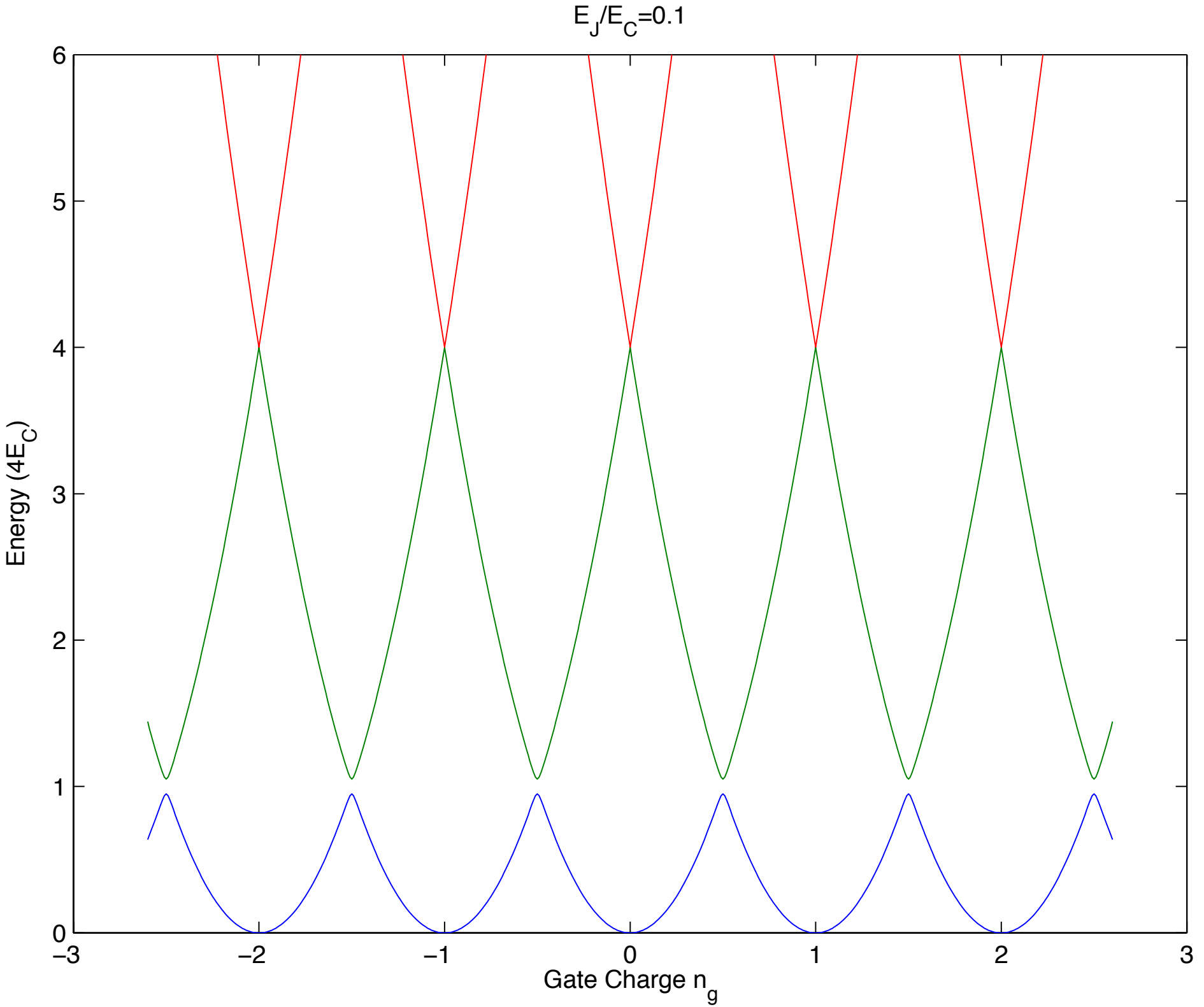
VO 141.246

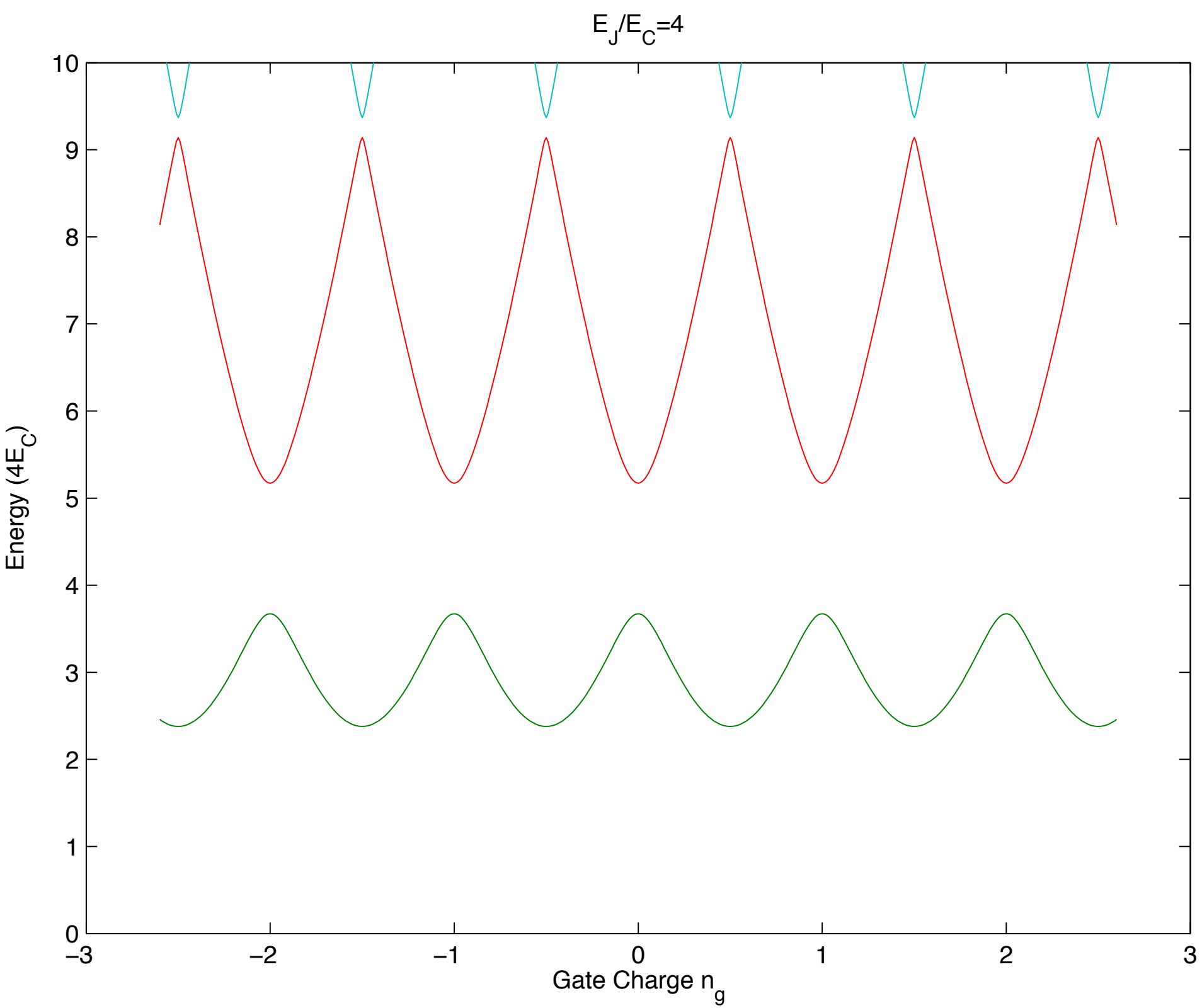
Dr. Johannes Majer

Lecture 8


E_J=0
Energy (E_C)
Gate Charge n_g
6
5
4
3
2
1
0
−3
−2
−1
0
1
2
3


E_J/E_C=0.0
Energy ($4E_C$)
Gate Charge n_g
6
5
4
3
2
1
0
−3
−2
−1
0
1
2
3


E_J/E_C=0.1
Energy ($4E_C$)
Gate Charge n_g
6
5
4
3
2
1
0
−3
−2
−1
0
1
2
3

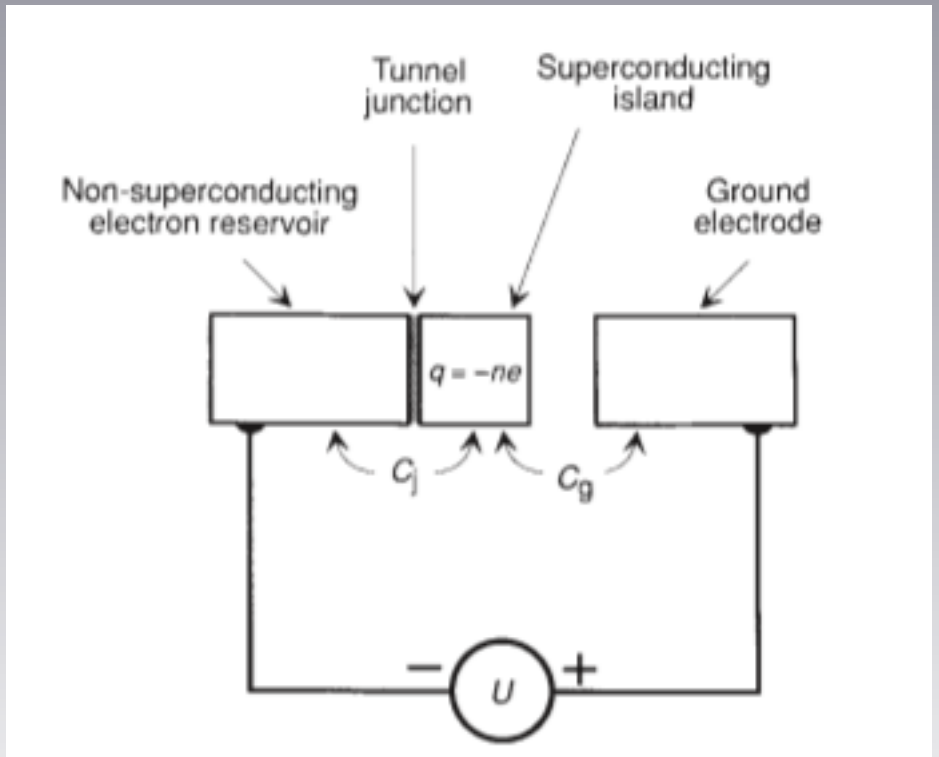

$E_J/E_C=4$
Energy ($4E_C$)
Gate Charge n_g
10
9
8
7
6
5
4
3
2
1
0
−3
−2
−1
0
1
2
3

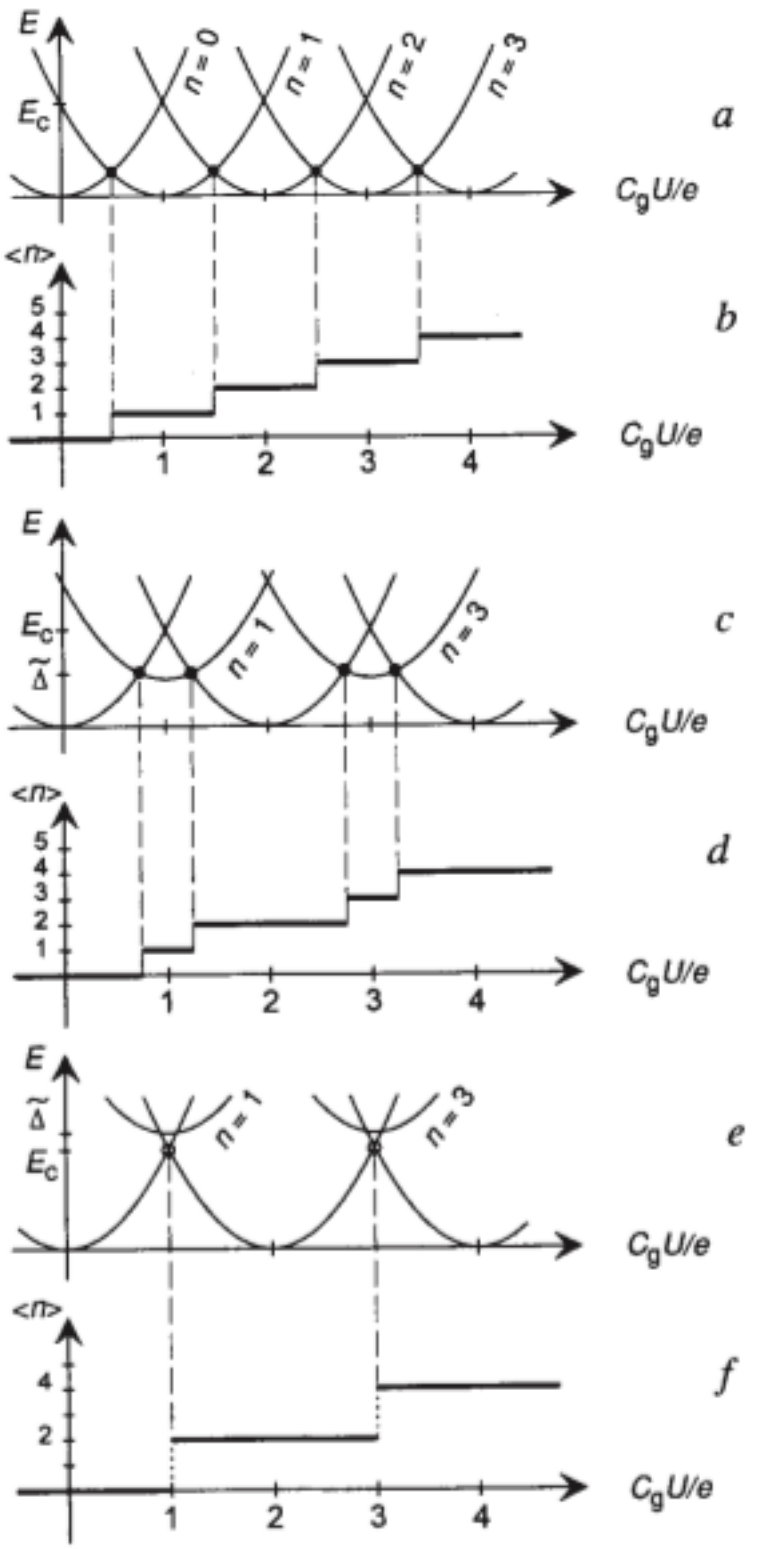
```
function eigenen = Hamiltonian(EJEC,ng,nmax)

Hel = 4*diag(([-nmax:nmax]-ng).^2);

[X,Y] = meshgrid(-nmax:nmax, -nmax:nmax);
offdiag=((X-1==Y) | (X==Y-1));

HJ = -EJEC/2*offdiag;

Ham = Hel+HJ;

eigenen = eig(Ham);
```

Two-electron quantization of the charge on a superconductor

P. Lafarge, P. Joyez, D. Esteve, C. Urbina & M. H. Devoret

Service de Physique de l'Etat Condensé, CEA-Saclay, F-91191 Gif-sur-Yvette, France





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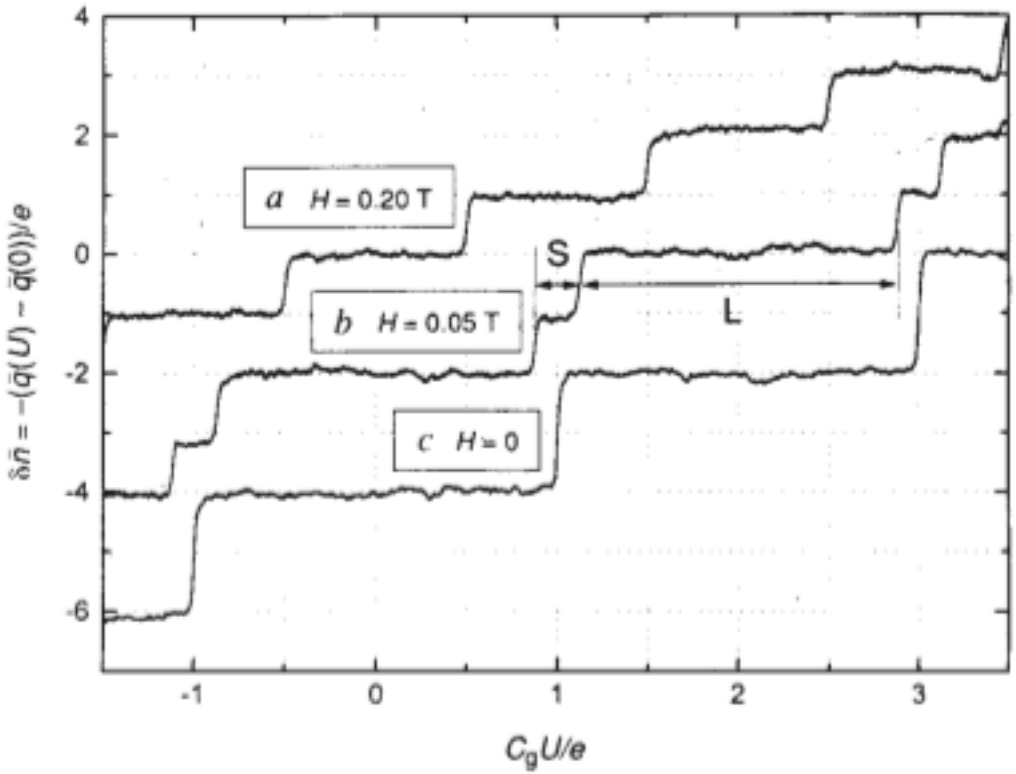
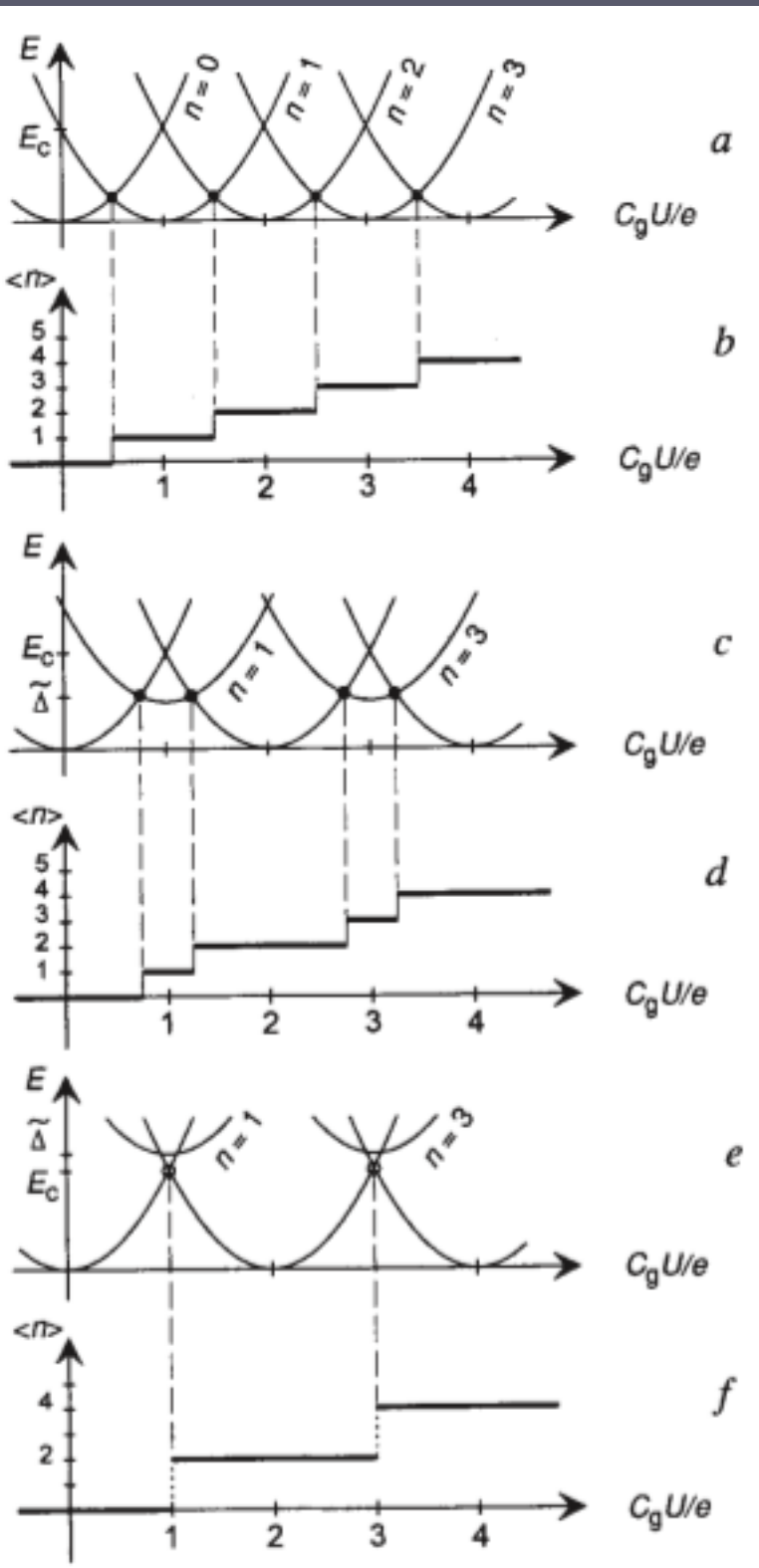
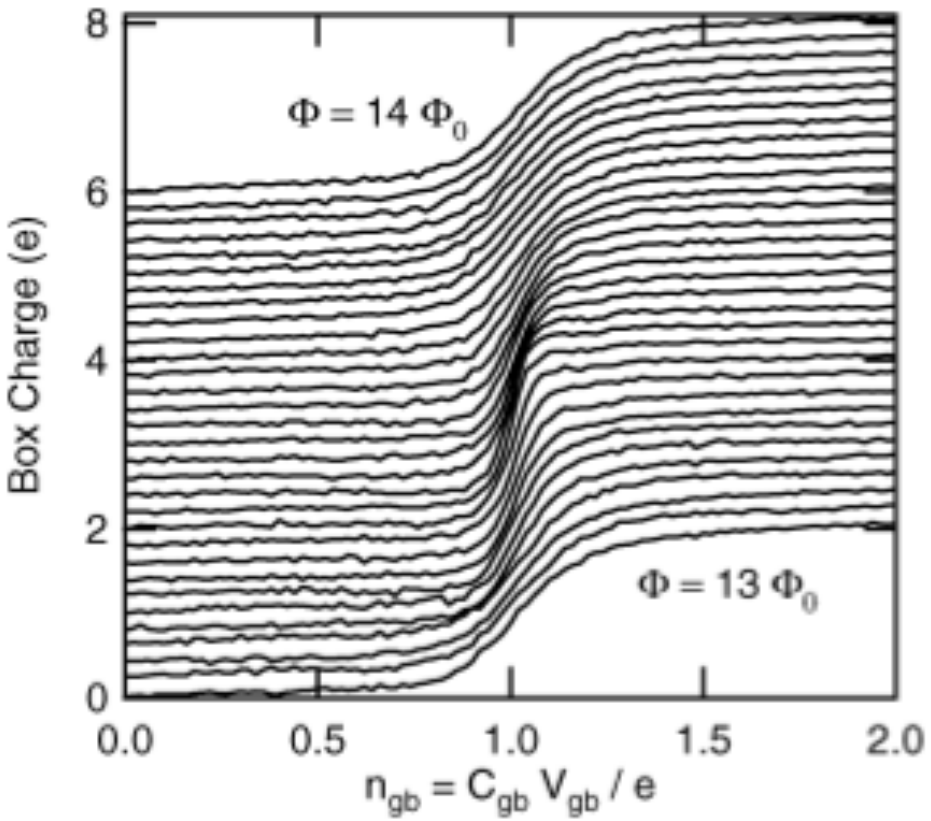
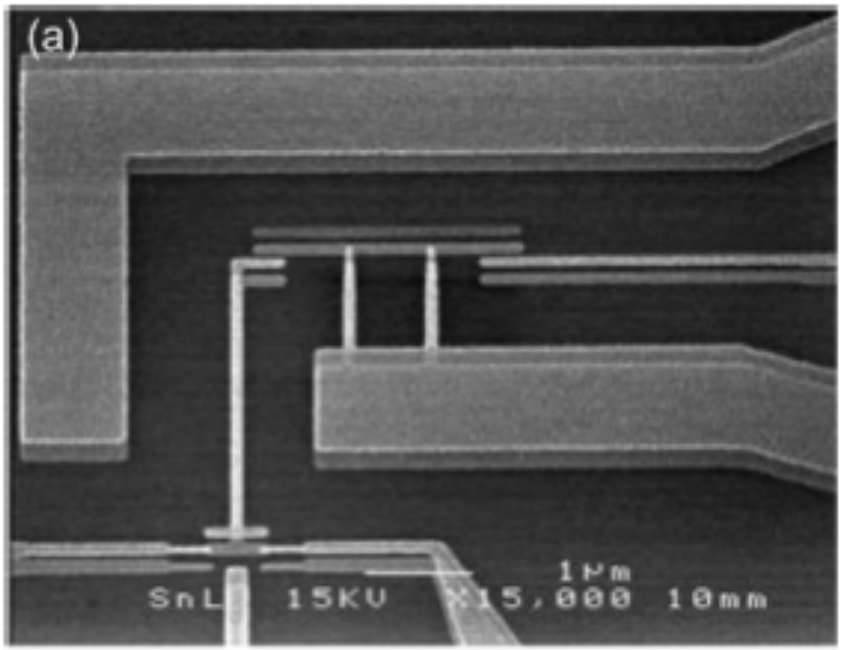


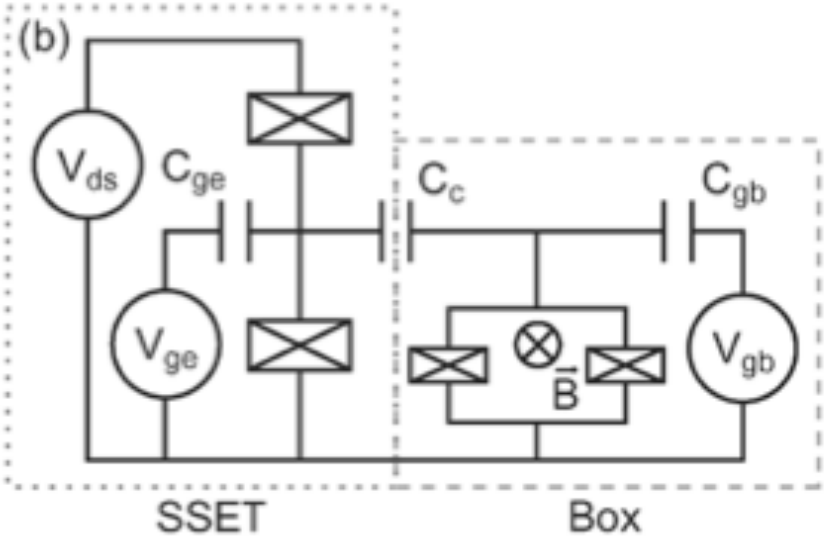


Backaction Effects of a SSET Measuring a Qubit Spectroscopy and Ground State Measurement

Benjamin Turek, Johannes Majer, Aashish Clerk, Steve Girvin, Andreas Wallraff, Kevin Bladh, David Gunnarsson, Tim Duty, Per Delsing, and Robert Schoelkopf







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