

1 QPC

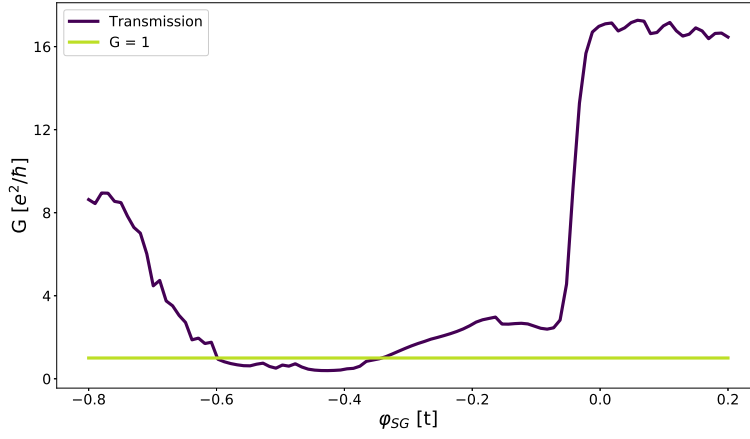


Figure 1: Conductance of QPC setup

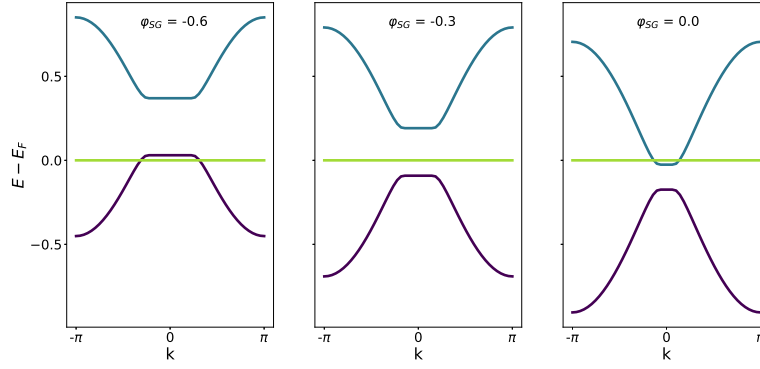


Figure 2: Bandstructure for different values of φ_{SG} at constant φ_{BG} . Yellowish line marks $E_F - E = 0$

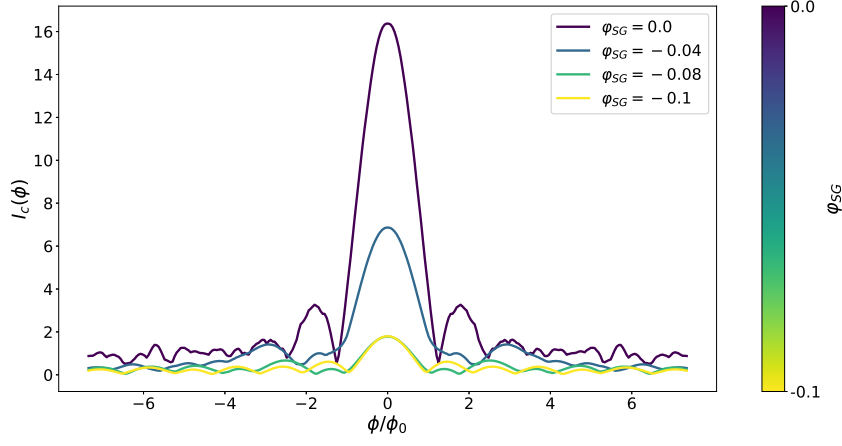


Figure 3: Supercurrent with increasing splitgate: $\varphi_{SG} \in [0.0, -0.1]$: transition from beating pattern to pattern for confined regime.

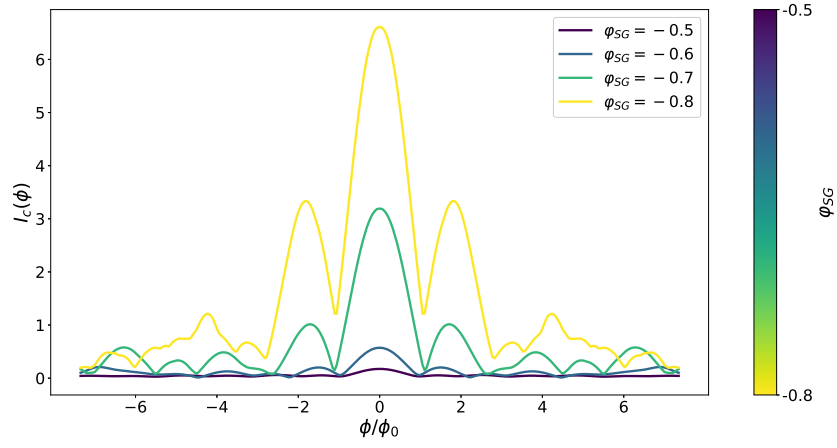


Figure 4: Supercurrent with increasing splitgate: $\varphi_{SG} \in [-0.5, -0.8]$: beating pattern recovers for increasing splitgate.

2 QPC with edge channels

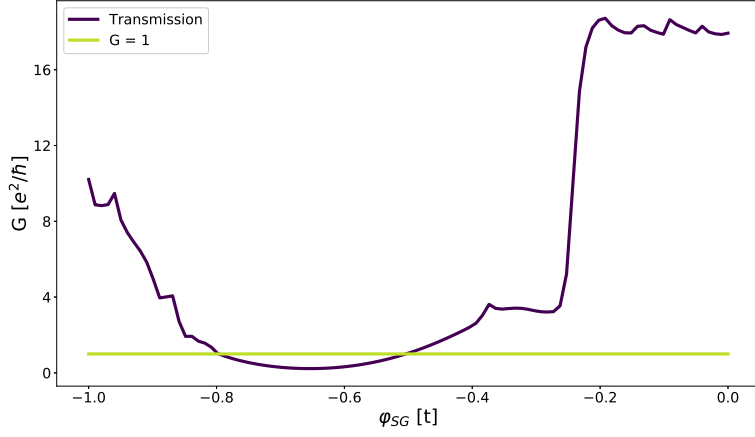


Figure 5: Conductance of QPC-like setup with edge channels

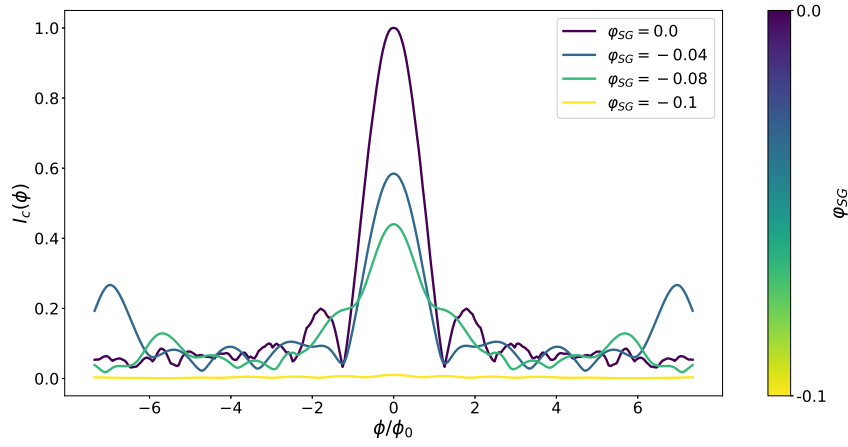


Figure 6: Supercurrent with increasing splitgate: $\phi_{SG} \in [0.0, -0.1]$

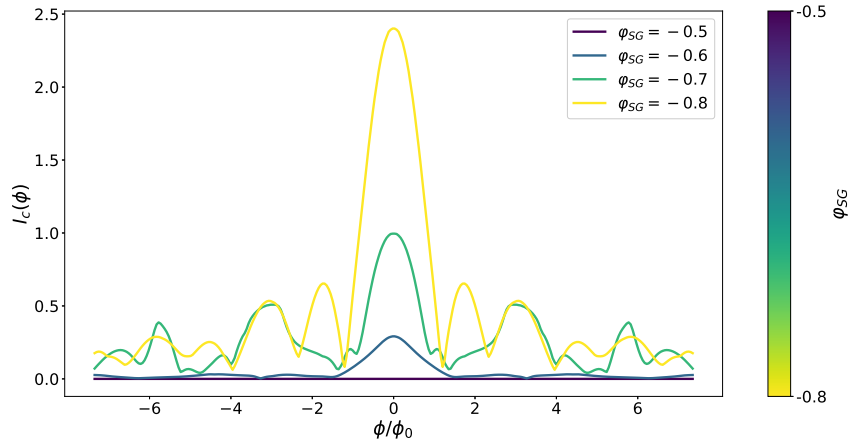


Figure 7: Supercurrent with increasing splitgate: $\phi_{SG} \in [-0.5, -0.8]$

3 Half barrier setup

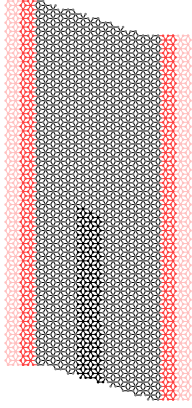


Figure 8: Lower finger

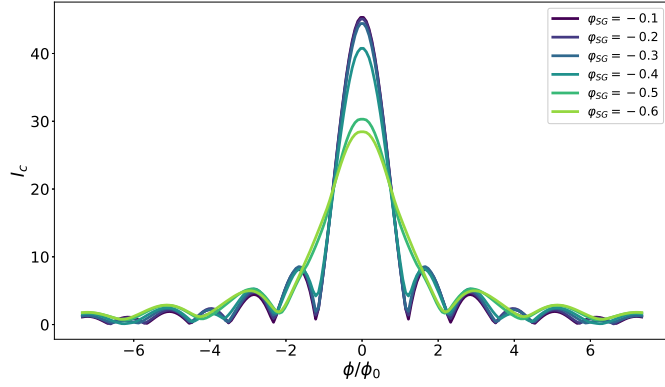


Figure 9: Critical current of lower finger

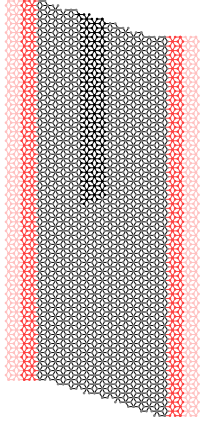


Figure 10: Upper finger

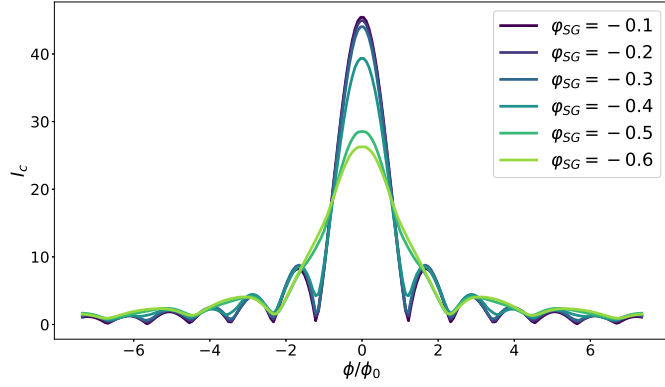


Figure 11: Critical current of upper finger

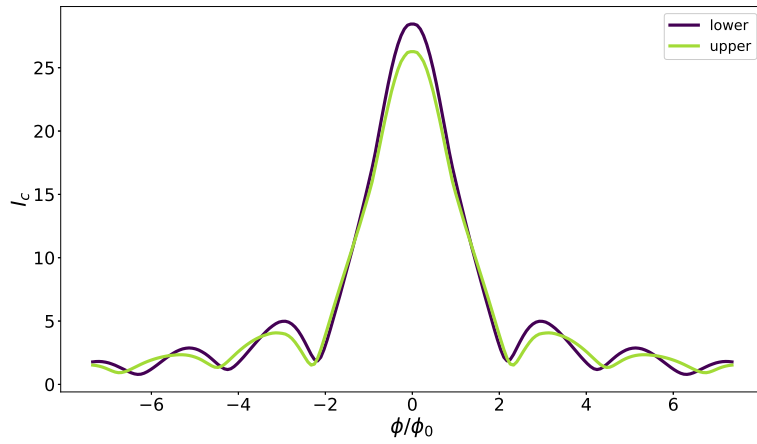


Figure 12: Comparing critical current curves for upper and lower finger of constriction at the same topgate voltage

4 Waveguide

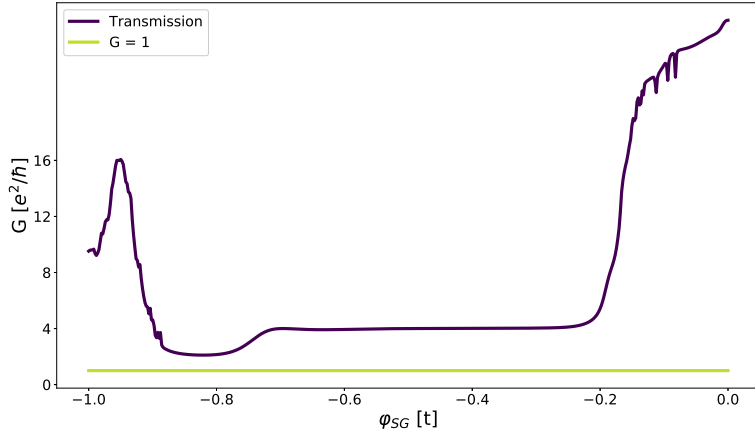


Figure 13: Conductance of waveguide set-up

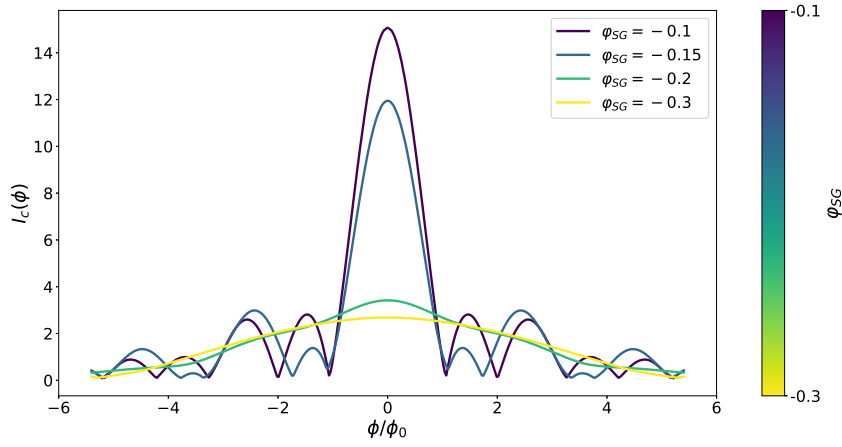


Figure 14: Supercurrent with increasing splitgate: $\phi_{SG} \in [0.0, -0.1]$

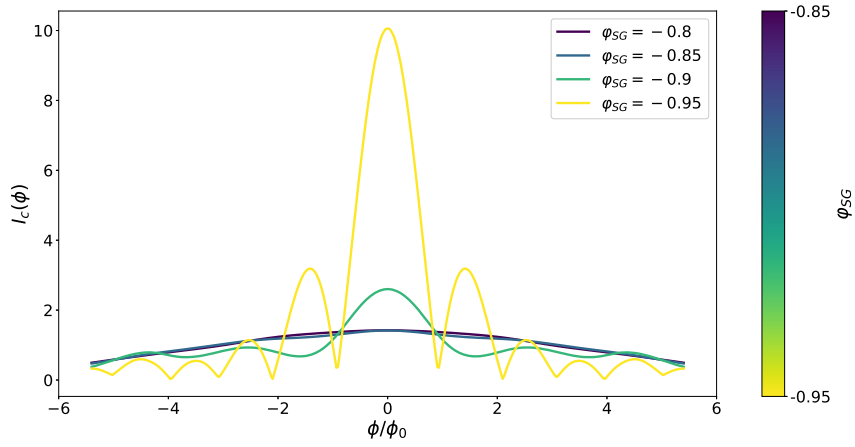


Figure 15: Supercurrent with increasing splitgate: $\phi_{SG} \in [-0.5, -0.8]$