1 Benchamrk week 4

Context: 30×15 SC with open boundary conditons.

We have a phase gradient of 117°. Starting from $\pi/2$. $T = 10^{-3}K$ and we iterrate until a relative change in both the real and imaginary part of Δ reach 0.001%.

For the negative μ we have to pick γ_{-n} and E_{-n} instead of γ_n and E_n to converge.

1.1 Phase

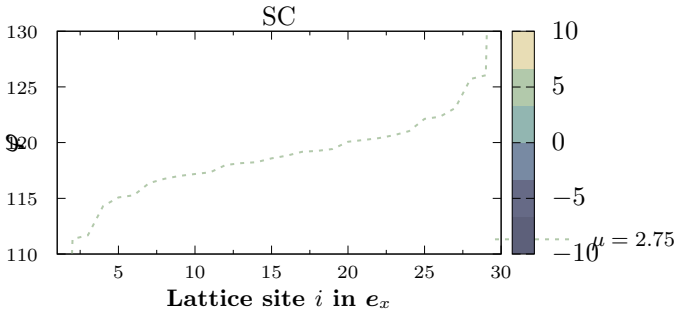


Figure 1: $\mu = 2.75$

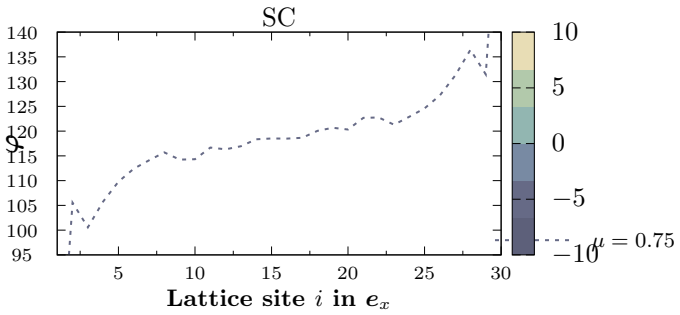


Figure 2: $\mu = 0.75$

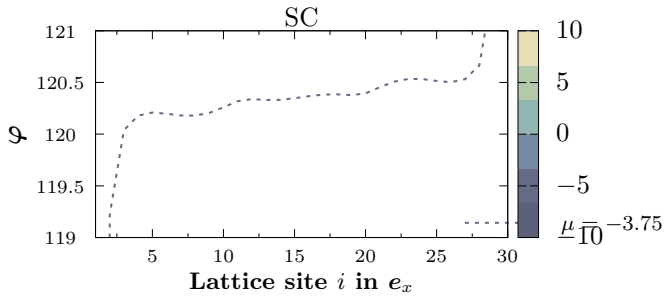


Figure 3: $\mu - 3.75$

The stronger the $|\mu|$, the weaker the gradient. The current grows with on the density of state.

1.2 Current

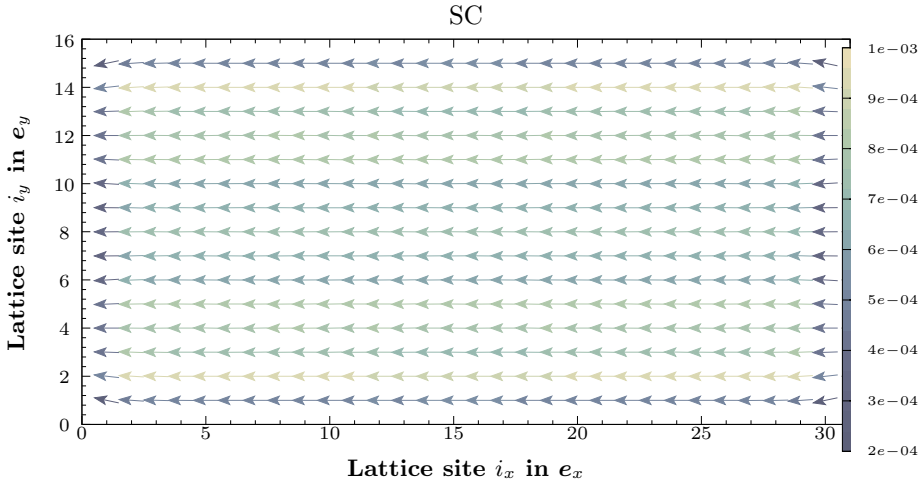


Figure 4: $\mu 2.75$

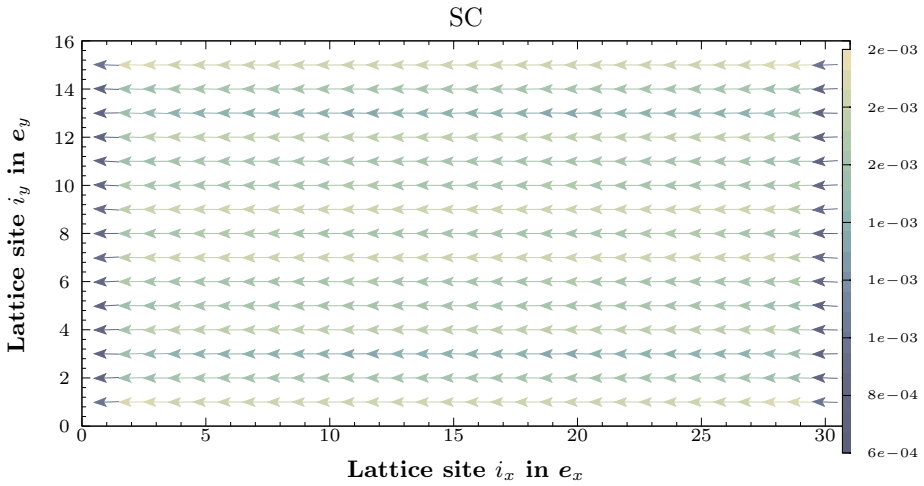


Figure 5: $\mu 0.75$

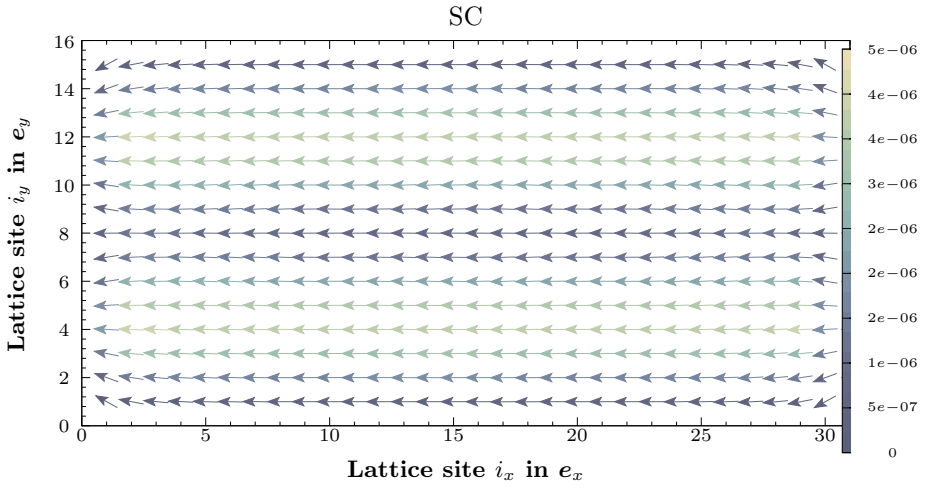
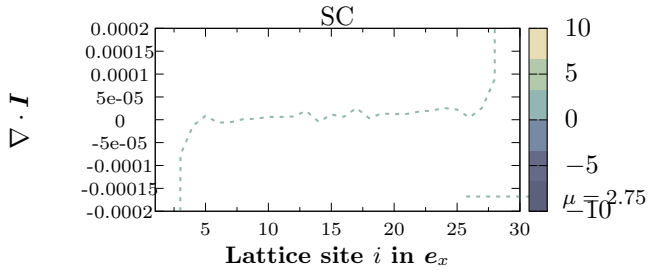
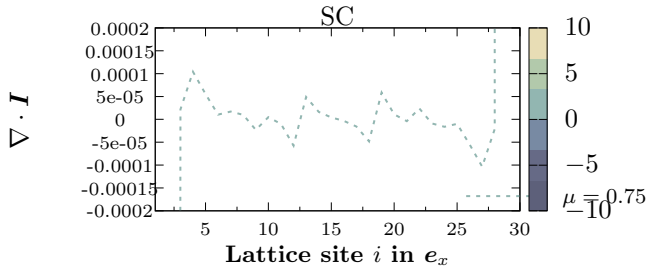


Figure 6: $\mu - 3.75$

1.3 Current Continuity





The current for $\mu = -3.75$ is very weak (e-6 in -x, e-9 in y) and the continuity lays in e-9 so it doesn't need to be shown.