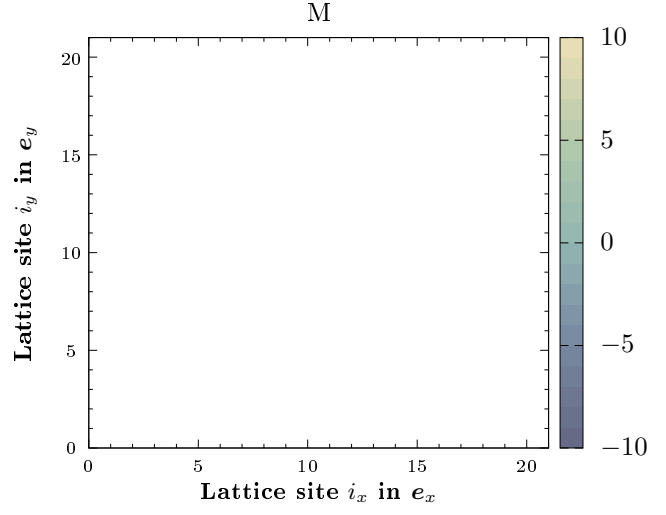
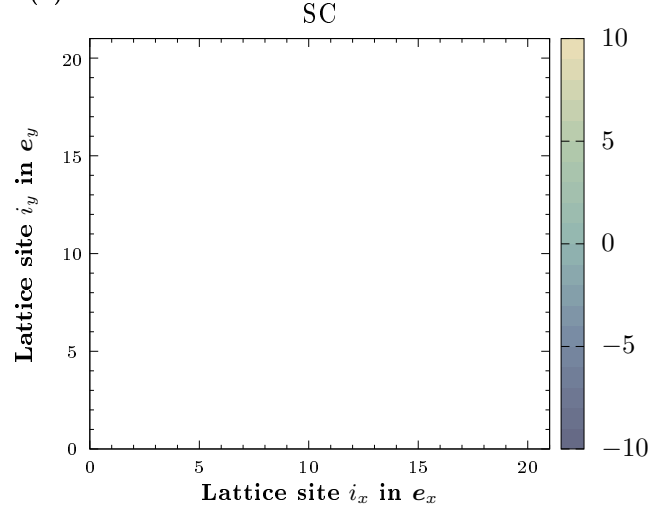


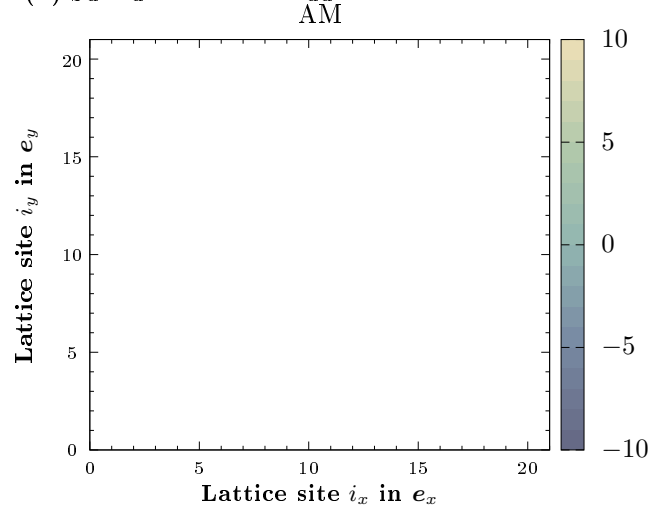
1 Benchmark



(a) Surrounded with vacuum.

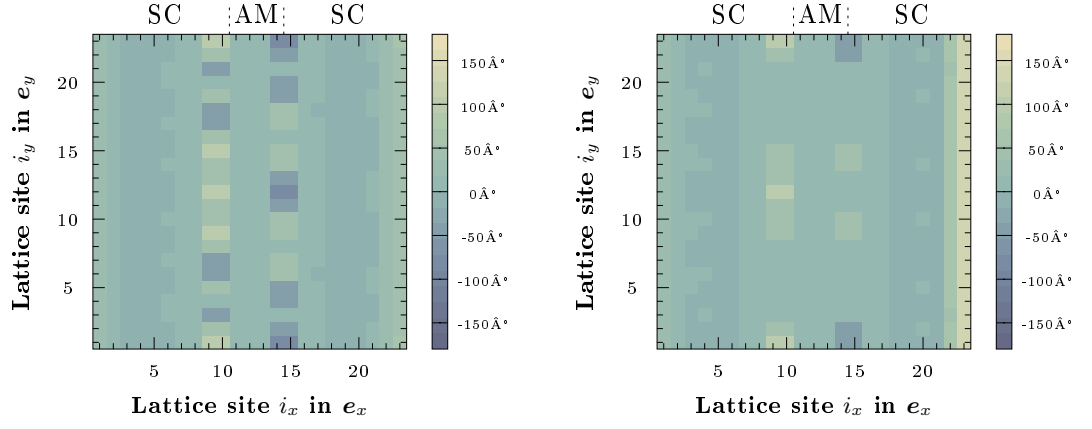


(b) Surrounded with vacuum.



(c) Surrounded with vacuum.

Figure 1: Benchmark for the currents $\sqrt{\langle I_i^x \rangle^2 + \langle I_i^y \rangle^2}$ in M, AM and SC



(a) Surrounded with vacuum. $\varphi = 27 \text{ deg}$ (b) Surrounded with vacuum. $\varphi = 27 + 90 \text{ deg}$

Figure 2: Benchmark for the phase $\arg(\Delta)$ in an SC, AM, SC material. On the left most side we have $\Delta = |\Delta_{\text{guess}}|e^{i\frac{\pi}{6}}$ and on the right most side $\Delta = |\Delta_{\text{guess}}|e^{i(\frac{\pi}{6} + \varphi\frac{\pi}{180})}$

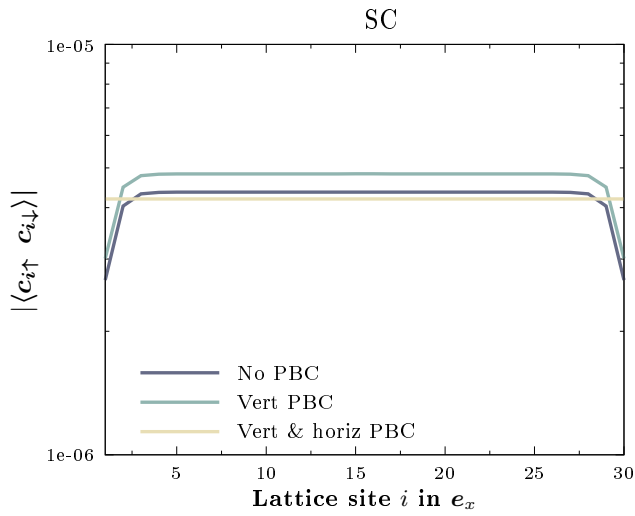


Figure 3: Mean value over the y -axis of the correlation function $|\langle c_{i\uparrow} c_{i\downarrow} \rangle|$ for different boundary conditions in a SC.

1.1 Litterature Model

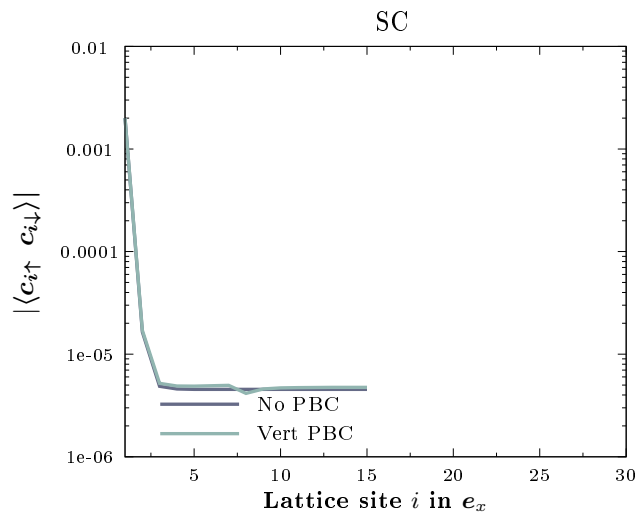
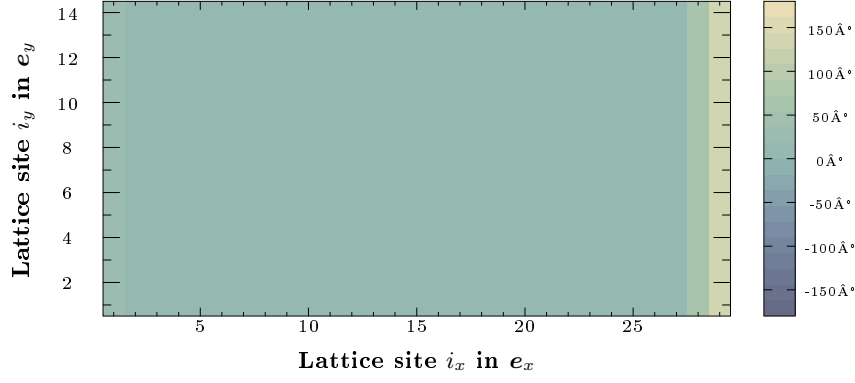
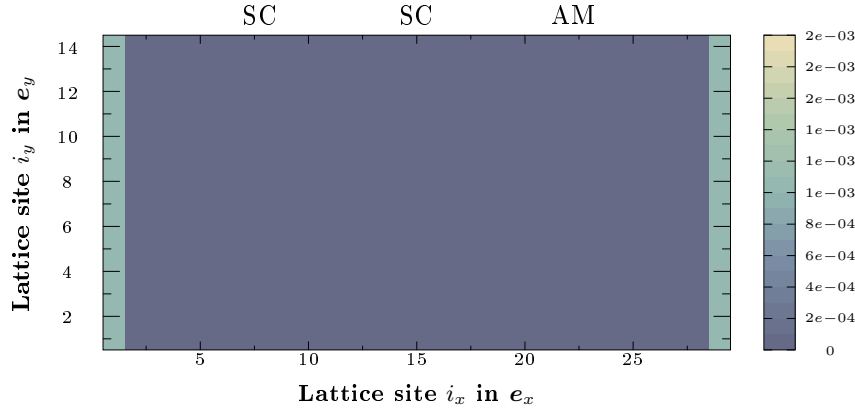


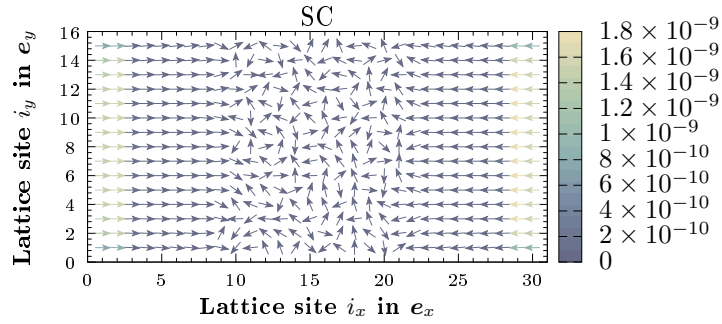
Figure 4: Mean value over the y -axis of the correlation function $|\langle c_{i\uparrow} c_{i\downarrow} \rangle|$ for different boundary conditions in a SC.



(a) Phase map. Surrounded with vacuum. $\varphi = 117$ deg

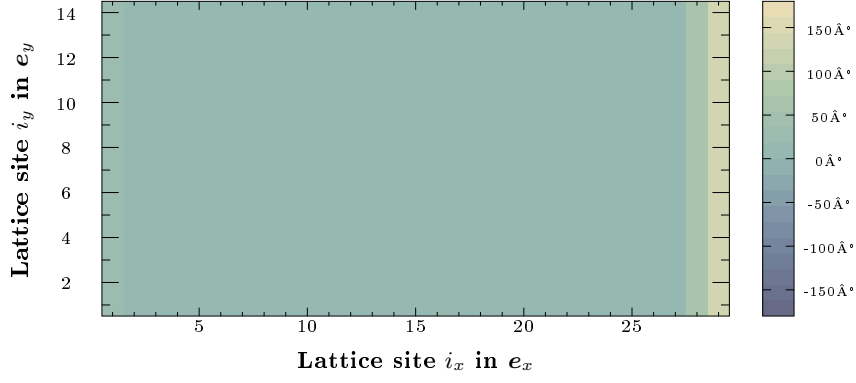


(b) Phase map. Surrounded with vacuum. $\varphi = 117$ deg

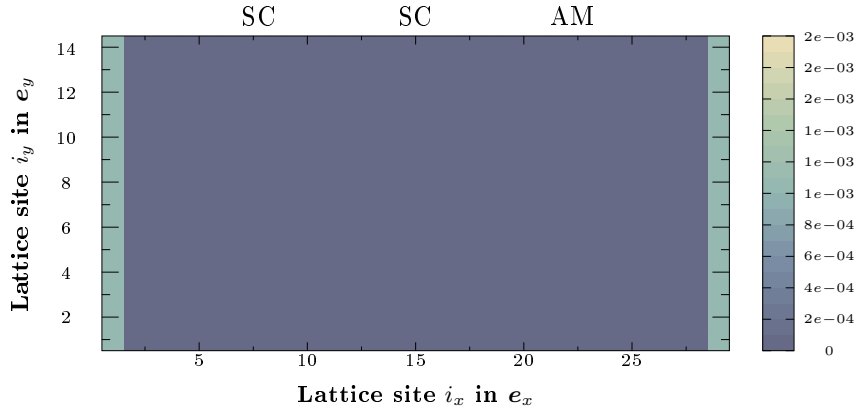


(c) Current map. Surrounded with vacuum. $\varphi = 117$ deg

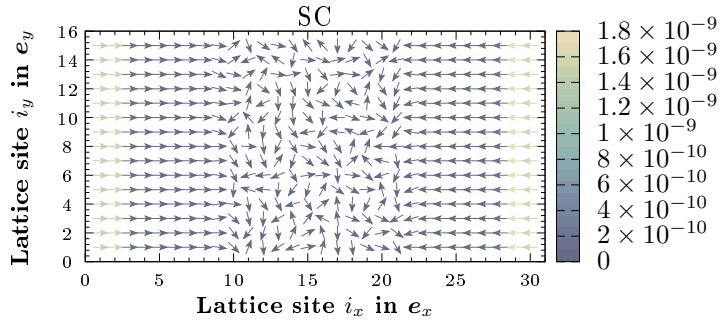
Figure 5: Benchmark for the phase $\arg(\Delta)$ in an SC material. We have $\Delta = |\Delta_{\text{guess}}|e^{i(\frac{\pi}{6} + \varphi \frac{\pi}{180})}$



(a) Phase map. Vert BC.. $\varphi = 117$ deg



(b) heat map Δ . Vert BC.. $\varphi = 117$ deg



(c) Current map. Vert BC. $\varphi = 117$ deg

Figure 6: Benchmark for the phase $\arg(\Delta)$ in an SC material. We have $\Delta = |\Delta_{\text{guess}}|e^{i(\frac{\pi}{6} + \varphi \frac{\pi}{180})}$

1.2 Litterature Model 2

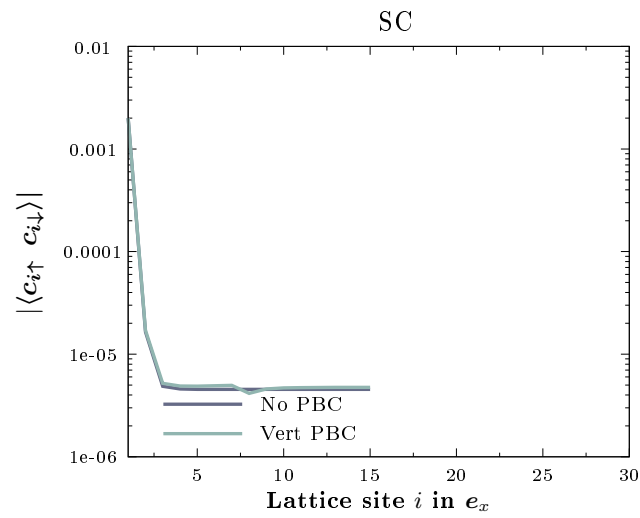
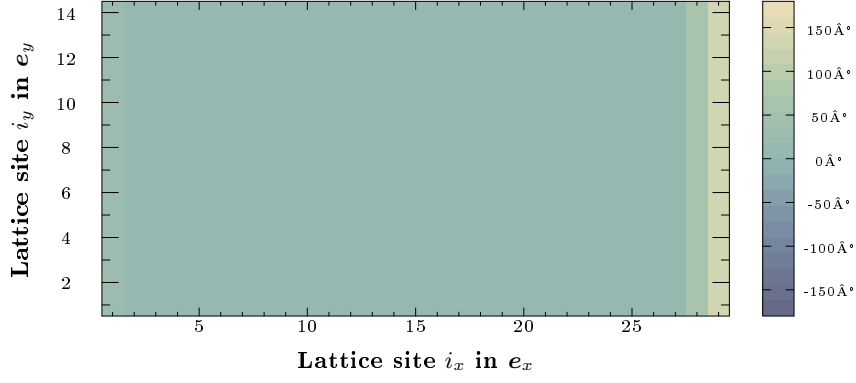
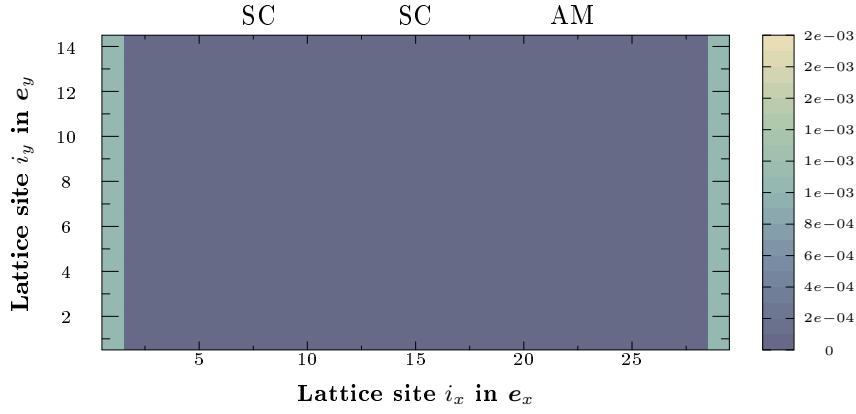


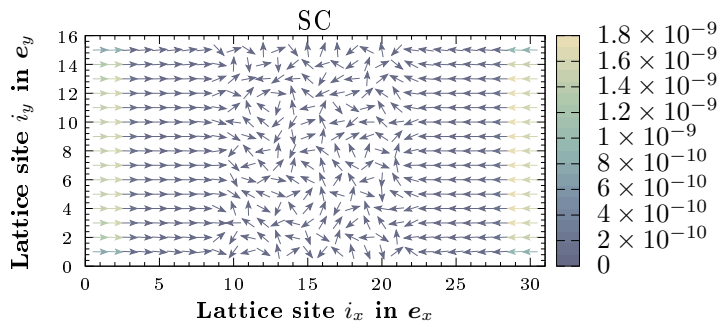
Figure 7: Mean value over the y -axis of the correlation function $|\langle c_{i\uparrow} c_{i\downarrow} \rangle|$ for different boundary conditions in a SC.



(a) Phase map. Surrounded with vacuum. $\varphi = 117$ deg

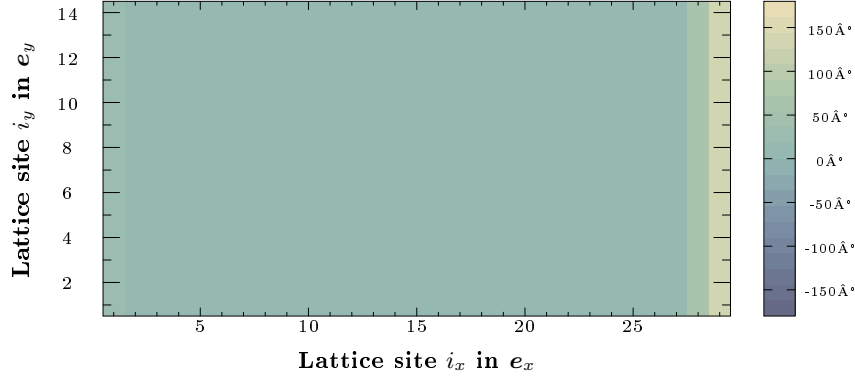


(b) Heatmap Δ . Surrounded with vacuum. $\varphi = 117$ deg

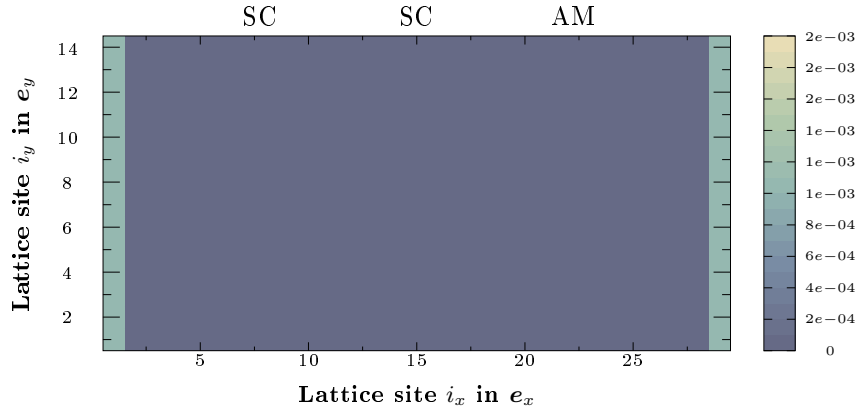


(c) Current map. Surrounded with vacuum. $\varphi = 117$ deg

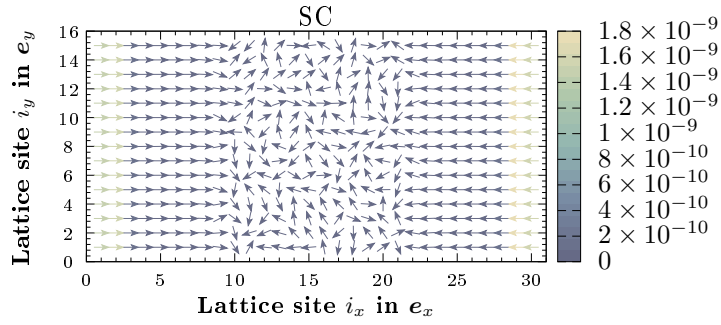
Figure 8: Benchmark for the phase $\arg(\Delta)$ in an SC material. We have $\Delta = |\Delta_{\text{guess}}|e^{i(\frac{\pi}{6} + \varphi_{180})}$



(a) Phase map. Vert BC. $\varphi = 117 \text{ deg}$



(b) Heatmap Δ . Vert BC. $\varphi = 117 \text{ deg}$



(c) Current map. Vert BC. $\varphi = 117 \text{ deg}$

Figure 9: Benchmark for the phase $\arg(\Delta)$ in an SC material. We have $\Delta = |\Delta_{\text{guess}}|e^{i(\frac{\pi}{6} + \varphi \frac{\pi}{180})}$

1.3 Own Model

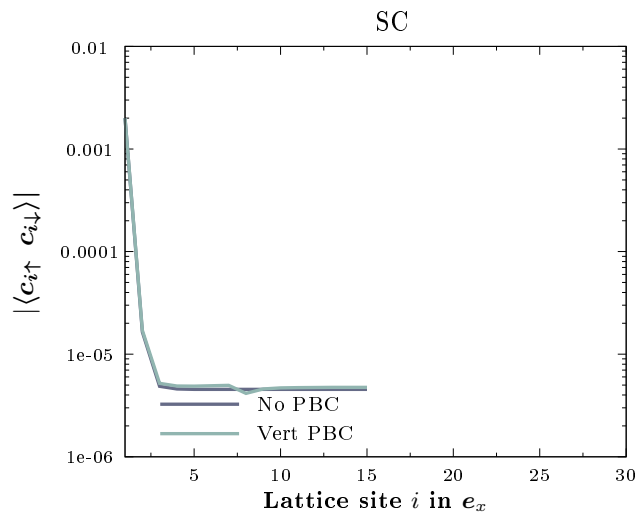
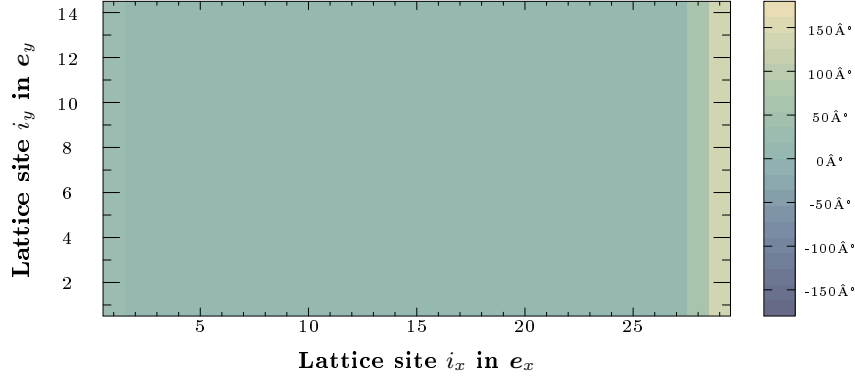
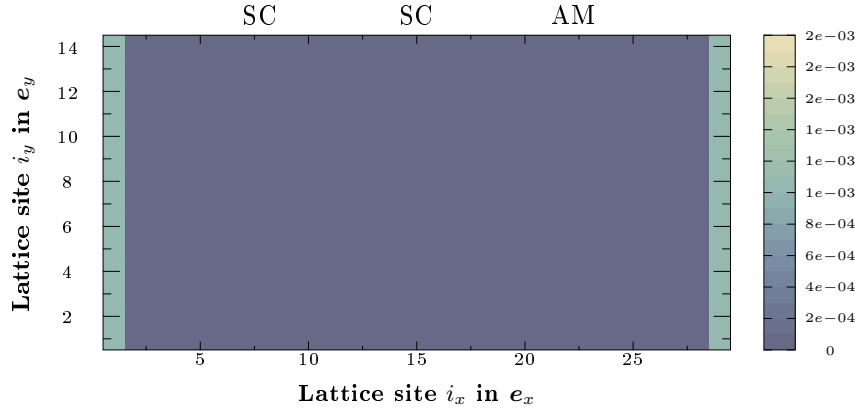


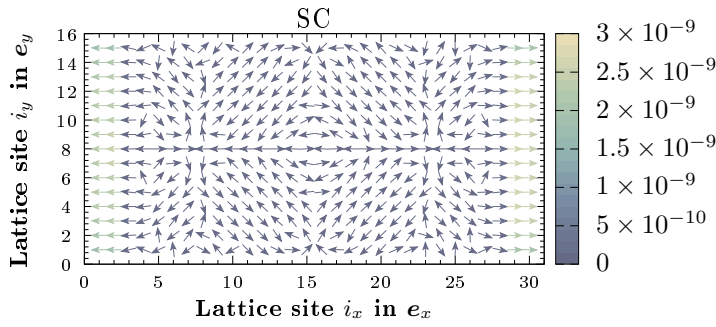
Figure 10: Mean value over the y -axis of the correlation function $|\langle c_{i\uparrow} c_{i\downarrow} \rangle|$ for different boundary conditions in a SC.



(a) Phase map. Surrounded with vacuum. $\varphi = 117$ deg

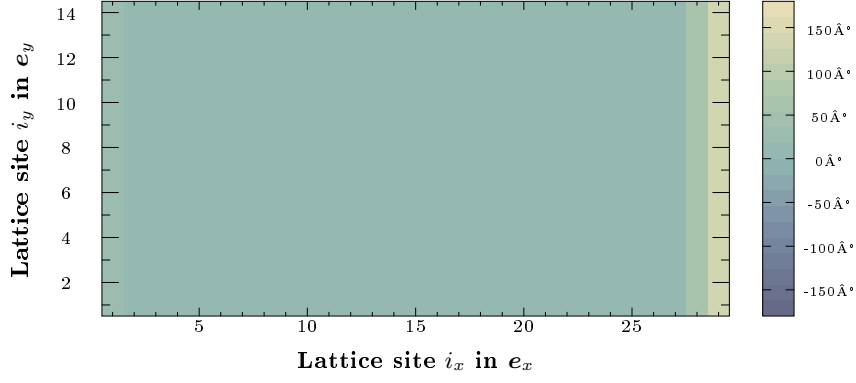


(b) Heatmap Δ . Surrounded with vacuum. $\varphi = 117$ deg

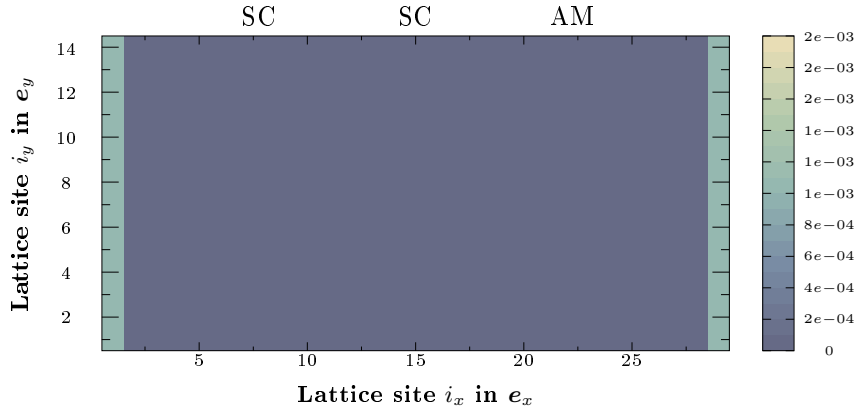


(c) Current map. Surrounded with vacuum. $\varphi = 117$ deg

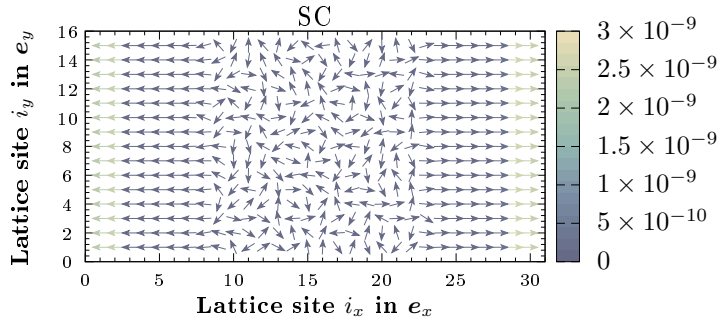
Figure 11: Benchmark for the phase $\arg(\Delta)$ in an SC material. We have $\Delta = |\Delta_{\text{guess}}| e^{i(\frac{\pi}{6} + \varphi \frac{\pi}{180})}$



(a) Phase map. Vert BC.. $\varphi = 117$ deg



(b) Heatmap Δ . Vert BC.. $\varphi = 117$ deg



(c) Current map. Vert BC. $\varphi = 117$ deg