

$$\begin{aligned} & \langle c_{\alpha}^{\dagger}(\mathbf{r}_1) c_{\alpha}(\mathbf{r}_2) \rangle \\ &= \left[\mathcal{P}(\mathbf{r}_1 - \mathbf{r}_2) \right] \times \Psi_{DW} \left(\frac{\mathbf{r}_1 + \mathbf{r}_2}{2} \right) e^{i\mathbf{Q} \cdot (\mathbf{r}_1 + \mathbf{r}_2)/2} + \text{c.c.} \end{aligned}$$