

Eigenvalues,  $\lambda(\mathbf{Q})$ , of the spin-singlet, particle-hole propagator.

The corresponding eigenvector is  $\mathcal{P}(\mathbf{k})$  and this leads to the order

$$\left\langle c_{i\alpha}^\dagger c_{j\alpha} \right\rangle = \left[ \int_{\mathbf{k}} \mathcal{P}(\mathbf{k}) e^{i\mathbf{k} \cdot (\mathbf{r}_i - \mathbf{r}_j)} \right] e^{i\mathbf{Q} \cdot (\mathbf{r}_i + \mathbf{r}_j)/2}$$