

$$\begin{aligned}
& |n_{1\uparrow}n_{1\downarrow}n_{2\uparrow}n_{2\downarrow}\rangle \\
& c_{1\uparrow}|1000\rangle = |0000\rangle \\
& c_{1\uparrow}^\dagger|0000\rangle = |1000\rangle \\
& c_{1\uparrow}|0100\rangle = c_{1\uparrow}|0000\rangle = 0 \\
& n_{i\sigma} = c_{i\sigma}^\dagger c_{i\sigma}
\end{aligned} \tag{1}$$

$$U > \frac{2}{g(E_F)v} \tag{2}$$