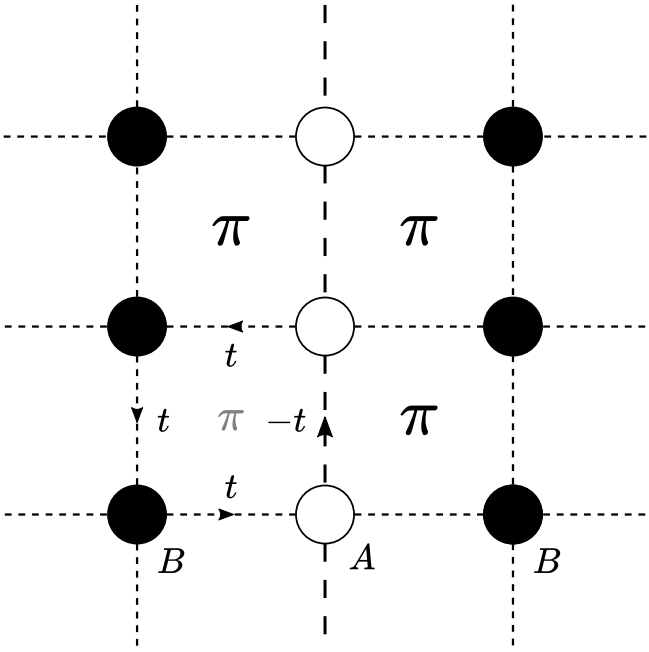

$$\mathbf{a}_1 = a\hat{\mathbf{x}} \quad \mathbf{a}_2 = a\hat{\mathbf{y}}$$

$$\mathbf{B}_{external} \odot \rightarrow \frac{\phi_0}{2} = \pi$$

$$H_r = \sum_{<ij>} \begin{bmatrix} a_{r_j}^\dagger & b_{r_j}^\dagger \end{bmatrix} \begin{bmatrix} -t & t \\ t & t \end{bmatrix} \begin{bmatrix} a_{r_i} \\ b_{r_i} \end{bmatrix}$$