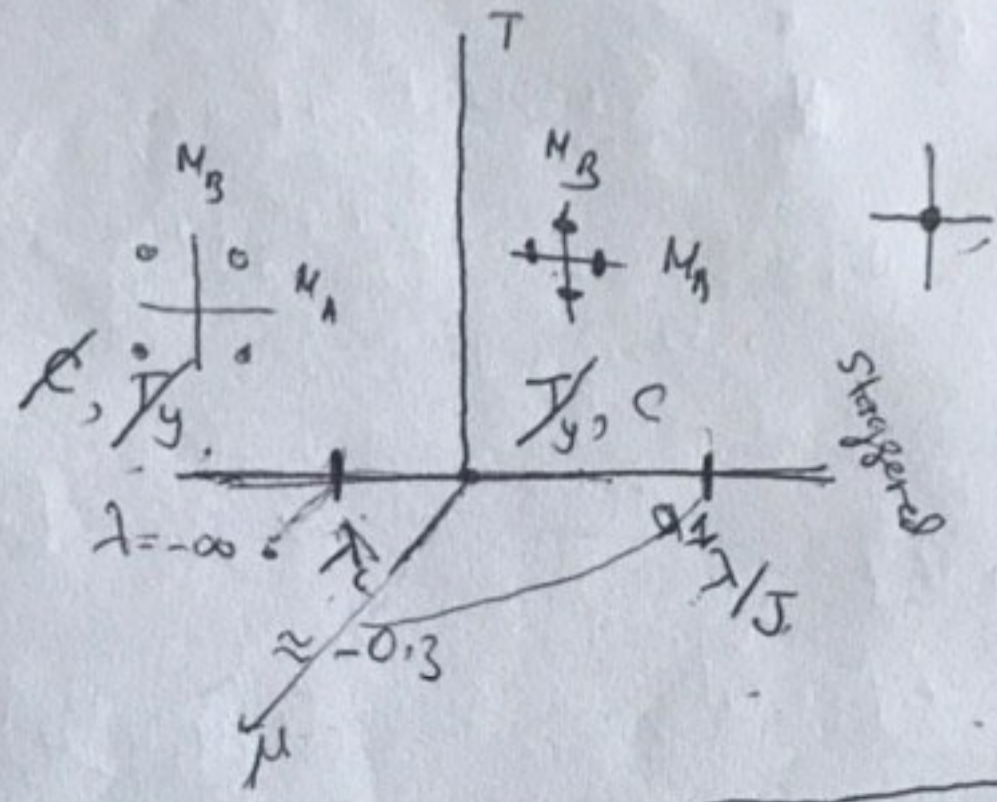
algorithm

- $L_y = 2, 4$
- OMP ?

- $\frac{\theta e^2}{4\pi} F\tilde{F}$
- Chern Simons

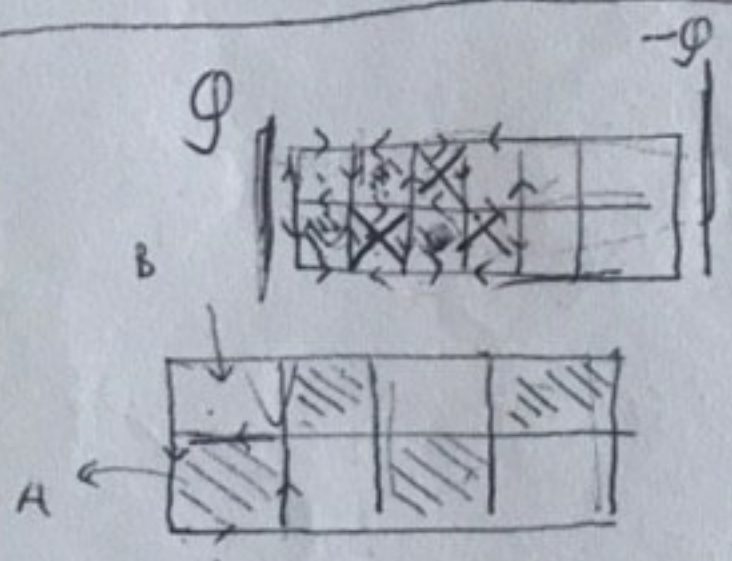
physics

$$H = -J \sum_{\square} (U_\square + U_\square^\dagger) + \lambda \sum_{\square} (U_\square + U_\square^\dagger)^2$$



ALGORITHM PARAMETERS

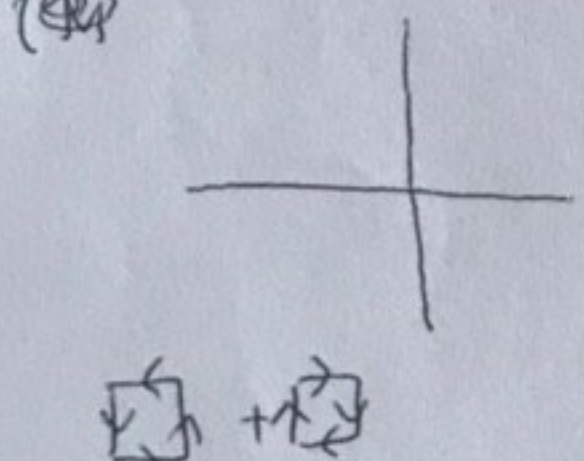
- L_x, bond dimensions
- $L_y = 2$
-



$M = (M_A, M_B)$

$M_A = \sum_x \sigma^{(x \in A)}_{flip}$

$M_B = \sum_x \sigma^{(x \in B)}_{flip}$



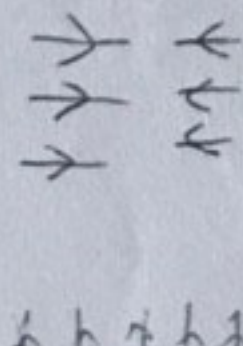
Discrete symm:

Internal: charge conj

$U \to U^\dagger, \; E \to -E$

Lattice: Translation (T_x, T_y) ?

$$H_1 = \mu_x \sum_{n,x} E_{n,x} + \mu_y \sum_{n,y} E_{n,y}$$



$$H_2 = -J \sum_{\square} \left(U_\square e^{i\varphi_\square} + U_\square^\dagger e^{-i\varphi_\square} \right) + \lambda \sum_{\square} \left(U_\square e^{i\varphi_\square} + U_\square^\dagger e^{-i\varphi_\square} \right)^2$$