stat=['b' 'b'] | N=[2 2] | J = 1 |M=6 | V_aa=1.00 | V_bb = 1.00 | U_ab = 1.00e-03 | pbc = 0

$$\hat{H}_\sigma = -J \sum_{i=0}^{M-1} (1-(-1)^{i+1}\Delta t)(a_{\sigma,i}^\dagger a_{\sigma,i+1} + h.c) + \frac{V_{\sigma\sigma}}{2} \sum_{i=0}^{M} \hat{n}_{\sigma,i}(\hat{n}_{\sigma,i} - 1), \quad \hat{H}_{ab} = U_{ab} \sum_{i=0}^{M} \hat{n}_{a,i}\hat{n}_{b,i}, \quad \sigma \in a,b$$

$$\hat{H}_{tot} = H_1 + H_2 + H_{ab}, \quad \hat{H}_{total}|\lambda\rangle = E_\lambda|\lambda\rangle$$