$J/t = -0.20, V_0/t = 0.00, V_B/t = 5.00$  $\mathbf{U} = \mathbf{U}_{SQRT}$ 1.0 0.8  $F_{avg}(\mathbf{r},\mathbf{U})$ 0.2 0.0  $\mathbf{U} = \mathbf{U}_{SWAP}$ 1.0 0.8  $F_{avg}(\mathbf{r},\mathbf{U})$ 0.2 0.0 U = I1.0 0.8  $F_{avg}(\mathbf{r},\mathbf{U})$ 0.2 0.0  $K_i/t$  $10^{-3}$ 

 $10^{-5}$