Symmetric and Antisymmetric WFs in the 2-particle Infinite Square Well

$n_1 = 1, n_2 = 2$
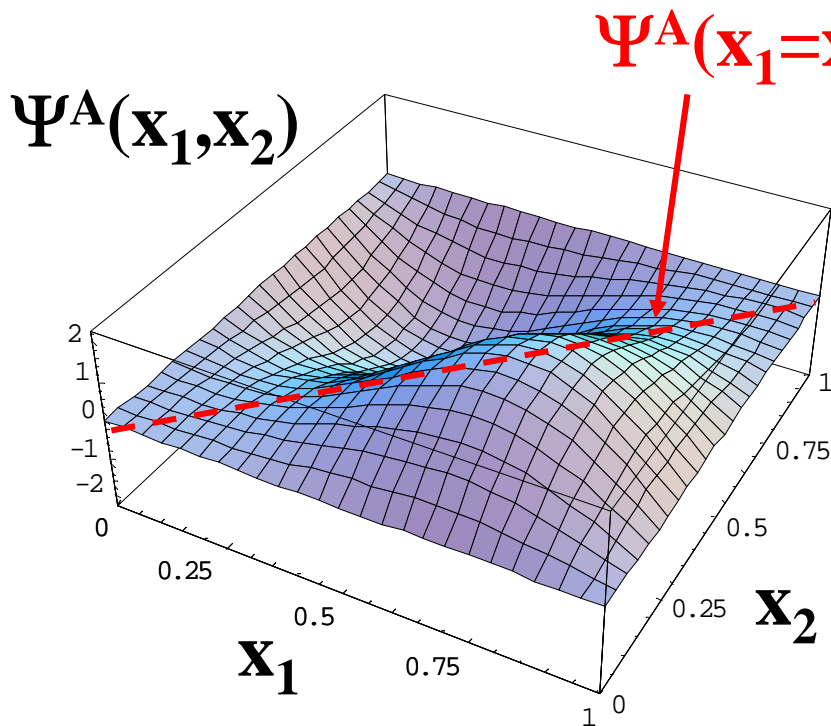
$\Psi^A(x_1=x_2)=0$

$\Psi^A(x_1,x_2)$

$\Psi^S(x_1,x_2)$

$|\Psi^A(x_1,x_2)|^2$ **The particles tend to stay apart**
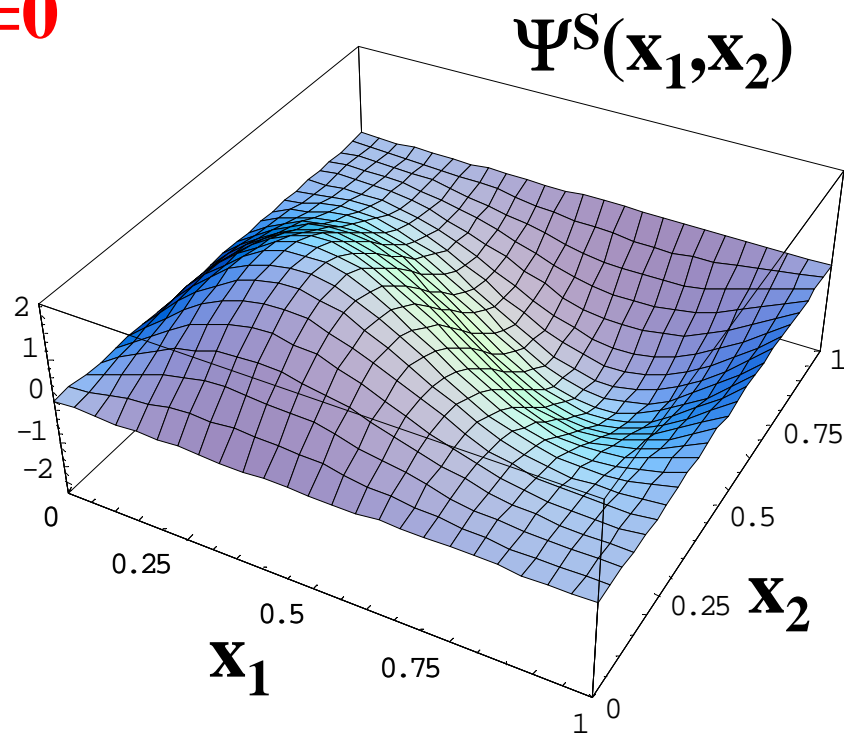
$|\Psi^S(x_1,x_2)|^2$ **The particles have a large probability of having $x_1 \sim x_2$**