

$$K_{S,R}^{(x)}(\rho_1, \rho_2) = \frac{2P}{\pi a_0^2} e^{-(|\rho_1|^2 + |\rho_2|^2)/a_0^2 - |\rho_2 - \rho_1|^2/2\rho_0^2}$$