

Define 3D polarizability. 
$$P(x_0) = \frac{1}{2}$$

$$x_0/R_x = 0.001$$

$$x_0/R_x = 0.01$$

$$x_0/R_x = 0.01$$

$$x_0/R_x = 0.05$$

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SD Polarizability

LDA calculation: 
$$\mathcal{P}(x_0 o 0) = \frac{a + a_{\uparrow\downarrow}}{a - a_{\uparrow\downarrow}}$$