

$$\psi_{i0}(|a_i| + u_i) = \psi_{i0}(|a_i|) + \frac{1}{2} \left( \frac{\delta^2 \psi_{i0}}{\delta u_i^2} \right) u_i^2 + \frac{1}{6} \left( \frac{\delta^3 \psi_{i0}}{\delta u_i^3} \right) u_i^3 + \frac{1}{24} \left( \frac{\delta^4 \psi_{i0}}{\delta u_i^4} \right) u_i^4$$