

$$P'_{\mathbf{x}} = \left(a - \frac{1}{2}\Delta a_{\mathbf{k}}\right) \cos(\mathbf{k} \cdot \mathbf{x}) + f\tilde{P}_{\mathbf{x}}$$

$$P''_{\mathbf{x}} = \left(a + \frac{1}{2}\Delta a_{\mathbf{k}}\right) \cos(\mathbf{k} \cdot \mathbf{x}) + f\tilde{P}_{\mathbf{x}}$$