

Be $x_1 = x_2 + \Delta x_{12}$ $\Delta x_{12} \in \mathbb{Z}^- \rightarrow x_2 > x_1$

$$0 = (2x_2 + 1)(2u_2 + 1) + 2\Delta x_{12}\Delta_2$$

$$= (2x_2 + 1)(2u_2 + 1)$$

$x_1 = x_2 - \Delta x_{12}$

$$0 = (2x_2 + 1)(2u_2 + 1) - 2\Delta x_{12}\Delta_2$$

$$- (2x_2 + 1)(2u_2 + 1) + \cancel{2\Delta x_{12}\Delta_2} + 2\Delta x_{12}(2u_2 + 1) + 2\Delta x_{12}\Delta_1$$

Be $(2x_2 + 1) = (2x_1 + 1)(2x_1' + 1)$

$$(2x_1 + 1)(2x_1' + 1)$$

$$0 = \cancel{(2x_2 + 1)(2u_2 + 1)} - 2\Delta x_{12}\Delta_2$$

$$- (2x_1 + 1)(2x_1' + 1)(2u_1 + 1) + 2\Delta x_{12}(2u_1 + 1) + 2\Delta x_{12}\Delta_1$$

$$(2x_1 + 1)(2x_1' + 1)(2u_1 + 1)$$

$$= \cancel{(2x_2 + 1)(2u_2 + 1)} - 2\Delta x_{12}\Delta_2$$

$$= (2x_1 + 1)(2x_1' + 1)(2u_1 + 1) - 2\Delta x_{12}\Delta_2$$

$$+ 2\Delta x_{12}(2u_1 + 1) + 2\Delta x_{12}\Delta_1$$

$$2u_1 + 1 = (2u_2 + 1) + 2\Delta x_{12} \frac{(-\Delta_2 + \Delta_1) + (2u_2 + 1)}{(2x_1 + 1)(2x_1' + 1)}$$

Be $u_1 = (-\Delta_2 + \Delta_1 + \alpha)(2x_1x_1' + x_1 + x_1') + \gamma$

$$\Rightarrow 2u_1 + 1 = (2u_2 + 1) + 2\Delta x_{12} \frac{(-\Delta_2 + \Delta_1) + 2 \cdot (-\Delta_2 + \Delta_1 + \alpha)(2x_1x_1' + x_1 + x_1') + 2\gamma + 1}{(2x_1 + 1)(2x_1' + 1)}$$

$$= (2u_2 + 1) + 2\Delta x_{12} \frac{(-\Delta_2 + \Delta_1) + 2 \cdot (-\Delta_2 + \Delta_1)(2x_1x_1' + x_1 + x_1') + 2\alpha(2x_1x_1' + x_1 + x_1')}{(2x_1 + 1)(2x_1' + 1)}$$

$$+ \frac{2\gamma + 1}{(2x_1 + 1)(2x_1' + 1)}$$

$$= (2u_2 + 1) + 2\Delta x_{12} (-\Delta_2 + \Delta_1) \frac{1 + 2(2x_1x_1' + x_1 + x_1')}{(2x_1 + 1)(2x_1' + 1)}$$

$$+ 2\Delta x_{12} \frac{2\alpha(2x_1x_1' + x_1 + x_1') + 2\gamma + 1}{(2x_1 + 1)(2x_1' + 1)}$$