

$$\mathbb{H} = \frac{ag^2}{2} \sum_{n=0}^{N-2} \left( \frac{1}{2} \sum_{m=0}^n (-1)^m + Z_m \right)^2 + \frac{1}{4a} \sum_{n=0}^{N-2} (X_{n+1}X_n + Y_{n+1}Y_n) + \frac{m}{2} \sum_{n=0}^{N-1} (-1)^n Z_n = \sum_n h_n$$