Correlation function 4

$$\hat{C}_4(r) = \frac{1}{R} \sum_{k=1}^{R} \left(\frac{1}{L} \sum_{i=1}^{L} \sigma_i \sigma_{i+r} - \left(\frac{1}{L} \sum_{i=1}^{L} \sigma_i \right)^2 \right) \left(1 - \left(\frac{1}{L} \sum_{i=1}^{L} \sigma_i \right)^2 \right)$$

