Correlation function 5

$$\hat{C}_5(r) = \frac{1}{R}\sum_{k=1}^{R}\left(\frac{1}{L}\sum_{i=1}^{L}\sigma_i\sigma_{i+r} - \left(\frac{1}{R}\sum_{k=1}^{R}\frac{1}{L}\sum_{i=1}^{L}\sigma_i\right)^2\right)$$