

# CS 475/575 -- Spring Quarter 2021

## Project #7B

### Autocorrelation using MPI

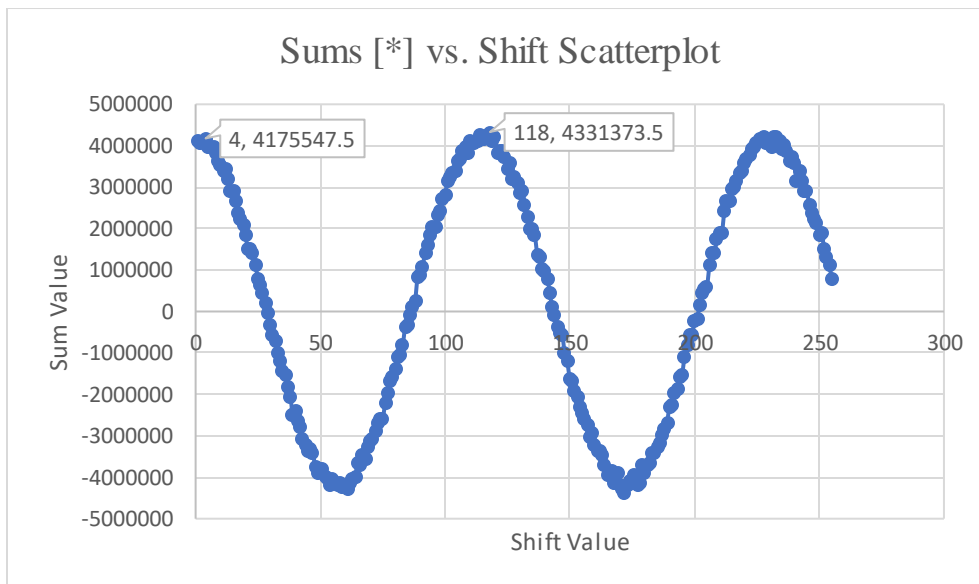
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#### 1. Machine:

MPI submission machine (COE MPI Cluster)

#### 2. Sum [1] ... Sum [512] vs. Shift Scatterplot

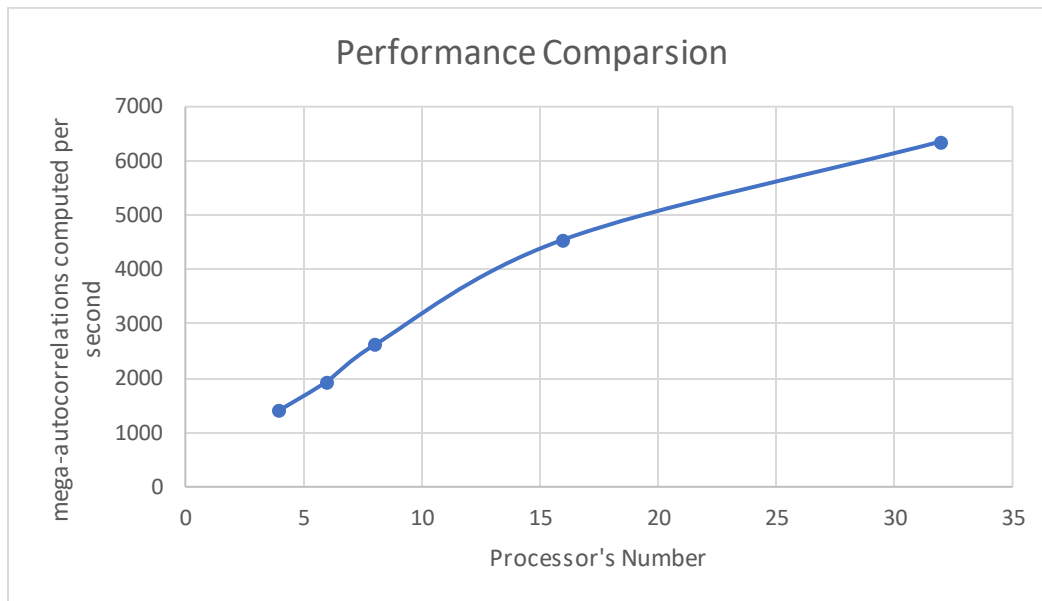


#### 3. State what the secret sine-wave period:

Based on the result graph shows, the sine-wave period is 114. The result was calculated from the first peak to second peak.

#### 4. Performance Chart

Processor's number	Performance (mega-autocorrelations computed per second)
4	1415.03
6	1944.65
8	2612.11
16	4553.32
32	6362.71



Depending on the graph, the performance is raising when the process's number increasing. The work loading of per processor is relatively large when the number of the processor is going down. It indicates that it will take more time to deal with the data. We can find that the line is pretty smooth and linear.