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Bfm21
Homework 9

NOTE: Due to the high load on the HPC, I was unable to get any jobs past the pending stage in batch mode, so all of the processes were run in interactive mode.
Each program was run with 1, 2, 4, 6 and 8 cores.

1.

1 core

Global min: -186.73

Total time was 26.471211 seconds.

2 cores

Global min: -186.73

Total time was 13.374686 seconds.

4 cores

Global min: -186.73

Total time was 7.728983 seconds.

6 cores

Global min: -186.71

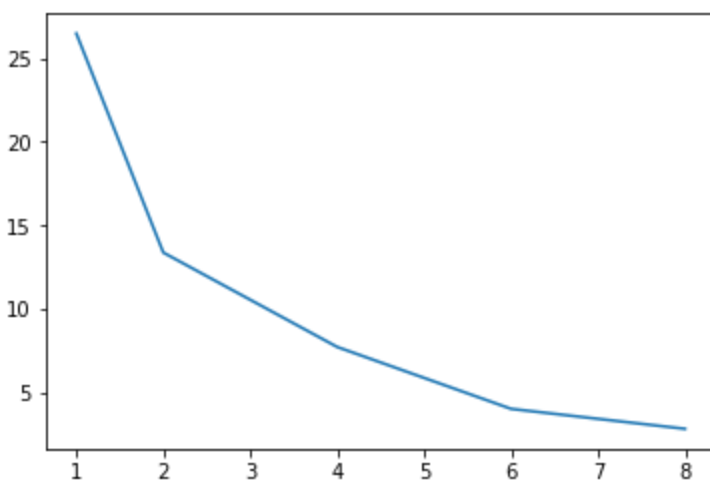
Total time was 4.029374 seconds.

8 cores

Global min: -186.71

Total time was 2.835702 seconds.

Below is a plot with the number of computing threads on the x axis and the compute time on the y axis:



2.

1 core

Global min: -186.73

Total time was 26.422736 seconds.

2 cores

Global min: -186.73

Total time was 13.926651 seconds.

4 cores

Global min: -186.73

Total time was 7.131700 seconds.

6 cores

Global min: -186.73

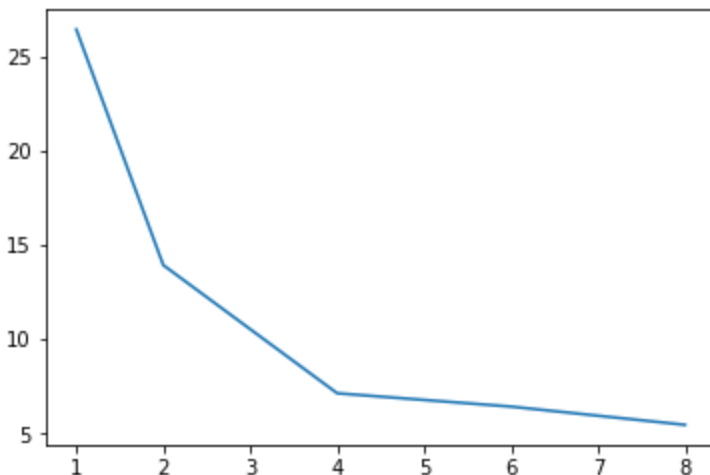
Total time was 6.423542 seconds.

8 cores

Global min: -186.73

Total time was 5.457830 seconds.

Below is a plot with the number of computing threads on the x axis and the compute time on the y axis:



3.

1 core

Global min: -186.73

Total time was 56.046307 seconds.

2 cores

Global min: -186.73

Total time was 42.548640 seconds.

4 cores

Global min: -186.73

Total time was 35.260839 seconds.

6 cores

Global min: -186.73

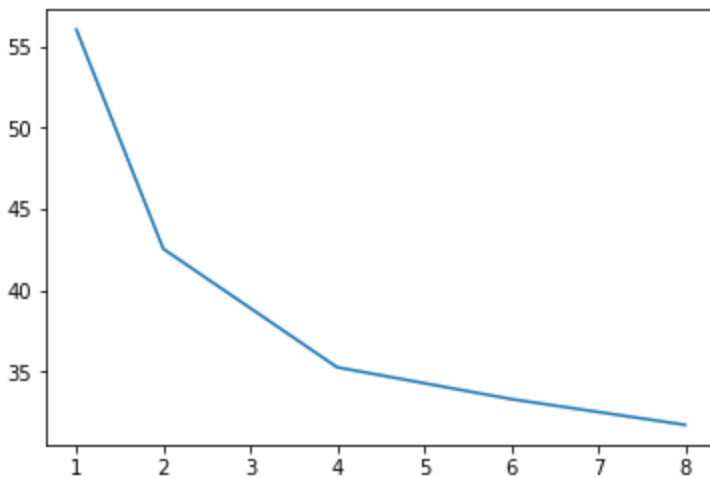
Total time was 33.304339 seconds.

8 cores

Global min: -186.73

Total time was 31.721118 seconds.

Below is a plot with the number of computing threads on the x axis and the compute time on the y axis:



It is apparent that for all three problems the computation speed is greatly reduced by adding cores, though in the last case the effect is less prominent.