Introduction to CUDA Parallel Programming Homework Assignment 10
Due 2020/06/02

1. Poisson equation on the 3-dimensional lattice

Consider a point charge at the origin of the 3-dimensional lattice with periodic boundary condition in all directions. Use cuFFT to perform the inverse Fourier transform from the momentum space to the position space, and obtain the potential along the diagonal as well as the x-axis of the 20 x 20 x 20 lattice.
Then, to assert that your solution is indeed physically correct.
Next, to investigate what is the largest 3D lattice you can solve the Poisson equation with one Nvidia GTX-970.

As usual, your homework report should include your source codes, results, and discussions. The discussion file should be prepared with a typesetting system, e.g., LaTeX, Word, etc., and it is converted to a PDF file. All files should be zipped into one gzipped tar file, with a file name containing your student number and the problem set number (e.g., r05202043_ps10.tar.gz). Please send your homework from your NTU email account to twchiu@phys.ntu.edu.tw before 24:00 of the due date.