

Spring 2019: Advanced Topics in Numerical Analysis: High Performance Computing Assignment 5 (due Apr. 29, 2019)

Handing in your homework: Hand in your homework as for the previous homework assignments (git repo with Makefile), answering the questions by adding a text or a \LaTeX file to your repo.

1. MPI ring communication.

For 100 loops around the ring, and 4 processors, we obtain:

When sending one number: Output = 600, should be = 600

pingpong latency: 3.168599e-02 ms

pingpong bandwidth: 5.583715e+00 GB/s

Project: Parallel KMC		
Week	Work	Who
04/15-04/21	Read paper. Start thinking about implementation.	Anya, Terrence
04/22-04/28	Write pseudo-code. Discuss boundary communication and time updating between blocks and sectors. Write up weekly plan.	Anya, Terrence
04/29-05/05	Implement 1 block for 1D. Compare to 1D serial and PDE (error for different L, β). Implement multiple blocks and compare.	Anya (first item), Terrence (third item)
05/06-05/12	Fix 1D bugs. Check 2D serial. Start 2D implementation for 1 and multiple blocks. Compare to PDE.	Anya (second item), Terrence (third item)
05/13-05/19	Fix bugs. Run scalability tests. Work on presentation slides and report.	Anya, Terrence