Contribution ID: **50** Type: **not specified**

MPI-GPU Algorithm in QuickPIC

Thursday 21 March 2024 16:40 (20 minutes)

QuickPIC is a quasi-static PIC code for efficiently modeling the plasma based accelerators. It can be 1000 times faster than the conventional PIC code without losing accuracy. QuickPIC is developed based on the frame work UPIC. It has a hybrid parallelism algorithm that uses both OpenMP and MPI. Such an algorithm is also suitable for a GPU cluster. In this work, we will introduce the GPU+MPI version of QuickPIC, including the algorithm for deposit, particle mover and sine and cosine FFTs.

Available for oral presentation in a session

No

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Session Classification: Poster Session