

Publication

A customized 3D GPU Poisson solver for free boundary conditions

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A 3-dimensional GPU Poisson solver is developed for all possible combinations of free and periodic boundary conditions (BCs) along the three directions. It is benchmarked for various grid sizes and different BCs and a significant performance gain is observed for problems including one or more free BCs. The GPU Poisson solver is also benchmarked against two different CPU implementations of the same method and a significant amount of acceleration of the computation is observed with the GPU version.

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