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Recent Developments on QuickPIC

Tuesday, 8 November 2022 17:00 (2h 30m)

QuickPIC has been an open source code since 2017 [1]. As a 3D parallel quasi-static PIC code, QuickPIC has been widely used for efficiently modeling the plasma based accelerator problems. Recently, a new field ionization module has been merged into the open source QuickPIC. Instead of the mesh ionization method, the new module is developed based on the particle ionization method, which can include mobile ions when simulating the field ionized plasma. We have also recently implement a module for calculating the beam's betatron radiation in QuickPIC. In addition, we will present the progress on the GPU version of QuickPIC. Details on mesh refinement routines in a development branch for QuickPIC will also be included.

Acknowledgments

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