

Abstract Submitted
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Computational Electromagnetics: Adaptation of the MD_GRAPE Accelerator Board ADAM SIMBECK, GARY BEDROSIAN
— Computational Electromagnetics (CEM) uses numerical methods to calculate interactions between electromagnetic fields and objects of interest. To speed up the CEM process, is it possible to adapt an accelerator chip that was designed for other applications? We are researching the use of such a device, the MD_GRAPE, for a CEM application based on the Finite Element Method (FEM). The MD_GRAPE was designed to accelerate the numerical analysis of any problem involving inter-particle forces, such as molecular dynamics, plasma physics, and hydrodynamics, but must be modified for the purposes of CEM. We present our progress in using the MD-GRAPE for the numerical generation of the FEM matrix equation for 3D magnetostatic fields, as a first step toward accelerating the full analysis process.

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