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# Speeding Up and Parallelizing the Garfield++

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Garfield++ is a toolkit for the simulation of the particle detectors that use semi-conductors as sensitive medium. It takes enormous amount of time in the simulations of the complex scenarios such as those involving high detector voltages, gases with larger gains or electric field meshes with large number of elements. We observed that most of the simulation time is being consumed in finding the correct element in the electric field mesh. We optimized the element search operation and achieved significant boost in the speed up. In addition, we added the parallel computing support in the toolkit to simulate multiple events simultaneously over multiple machines. In this paper, we present our approach of speeding up the computations and benchmark results.

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