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Developments in Performance and Portability of BlockGen

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For more than a decade Monte Carlo (MC) event generators with the current matrix element algorithms have been used for generating hard scattering events on CPU platforms, with excellent flexibility and good efficiency.

While the HL-LHC is approaching and precision requirements are becoming more demanding, many studies have been made to solve the bottleneck in the current MC event generator toolchains. The novel family of fast matrix element algorithms (BlockGen) shown in this report, is one of the new developments that are more suitable for GPU acceleration.

We report the development experience of porting Blockgen using Kokkos. Moreover, we discuss the performance of the Kokkos version in comparison with the dedicated GPU version in CUDA.

Significance

References

Experiment context, if any

Primary authors: BOTHMANN, Enrico (University of Göttingen); ISAACSON, Joshua; KNOBBE, Max; WANG, Rui (Argonne National Laboratory (US)); HOECHE, Stefan (Fermilab); CHILDERS, Taylor (Argonne National Laboratory (US)); GIELE, Walter

Presenters: WANG, Rui (Argonne National Laboratory (US)); CHILDERS, Taylor (Argonne National Laboratory (US))

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