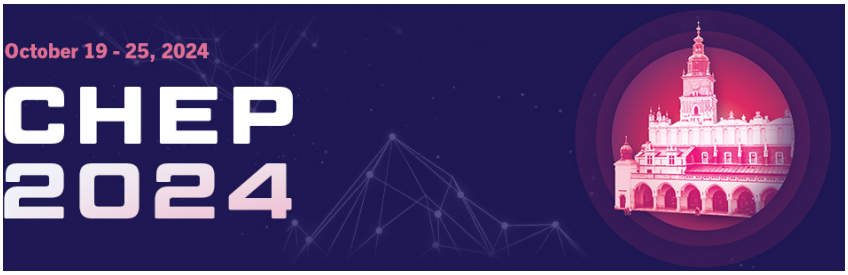

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Heterogeneous reconstruction of hadronic Particle Flow clusters with the Alpaka Portability Library

Wednesday 23 October 2024 16:00 (15 minutes)

In response to increasing data challenges, CMS has adopted the use of GPU offloading at the High-Level Trigger (HLT). However, GPU acceleration is often hardware specific, and increases the maintenance burden on software development. The Alpaka (Abstraction Library for Parallel Kernel Acceleration) portability library offers a solution to this issue, and has been implemented into the CMS software (CMSSW) for use online at HLT.

A portion of the final-state particle candidate reconstruction algorithm, Particle Flow, has been ported to Alpaka and deployed at HLT for 2024 data taking. The formation of hadronic Particle Flow clusters represented a target for increased performance through parallel operation. We will discuss the port of hadronic Particle Flow clustering to Alpaka, and the validation of physics and performance at HLT.

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