Contribution ID: **307**   Type: **Poster**

Enabling continuous speedup of CMS Event Reconstruction through continuous benchmarking

Monday 24 October 2022 16:10 (30 minutes)

The outstanding performances obtained by the CMS experiment during Run1 and Run2 represent a great achievement of seamless hardware and software integration. Among the different software parts, the CMS offline reconstruction software is essential for translating the data acquired by the detectors into concrete objects that can be easily handled by the analyzers. The CMS offline reconstruction software needs to be reliable and fast. The long shutdown 2 (LS2) elapsed between LHC Run2 and Run3 has been instrumental in the optimization of the CMS offline reconstruction software and for the introduction of new algorithms reaching a continuous CPU speedup. In order to reach these goals, a continuous benchmarking pipeline has been implemented; CPU timing and memory profiling, using the igprof tool, are performed on a regular basis to monitor the footprint of the new developments and identify the possible areas of performance improvement. The current status and achievement obtained by a continuous benchmarking of CMS experiment offline reconstruction software are described here.

Experiment context, if any

CMS Experiment

References

Significance

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Session Classification: Poster session with coffee break