Contribution ID: **605** Type: **Parallel session talk**

Estimating energy consumption and carbon costs of GEN-SIM, DIGI and RECO jobs at LHC

Friday 19 July 2024 09:00 (15 minutes)

As computing becomes substantial for achieving scientific and social progress, its environmental implications often remain underestimated. While the value of scientific computing is witnessed by its ubiquitous achievements, its growing demands have lead, in turn, to increased energy and carbon footprint costs.
With the goal of describing such computational trace in subnuclear physics (SNP), this work estimates the energy consumption of benchmark SNP workloads with a containerized original monitoring software. The benchmark workloads used in this work are GEN-SIM, DIGI and RECO containerized jobs deployed by the HEPScore project. The monitoring software extracts the CPU and RAM usage of such jobs in real-time via process IDs and estimates, with this information, their energy (kWh) and carbon utilization (gCO2e).
The results can be used as a starting point towards a "greener"approach to computing methods and integrate current benchmarking scores with energy efficiency-related metrics.

Alternate track

1. Technology Applications and Industrial Opportunities

I read the instructions above

Yes

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Session Classification: Sustainability

Track Classification: 18. Sustainability (accelerators, detectors, computing)