

Power consumption of HEP-Benchmarks workloads

- HEP-Benchmarks project → HEP-score CPU benchmark for WLCG
 - A collection of containerized HEP workloads of the LHC experiments (GEN, SIM, RECO...)
 - Essentially, *measure the value (throughput: events per second)* of a computing node
- Example (WIP): Madgraph5 event generator (Stefan Roiser's talk)
 - A candidate benchmark for SIMD CPUs and for GPUs
 - In the *madgraph4gpu* project, we *optimize throughput (increase the value)* of a node to run MG5aMC
- Proposal: set up a (hardware and software) framework to measure power consumption
 - For a computing node, *measure its electricity operating cost (power: Watts)* to run a HEP-workload
 - *Similar studies have been presented to the HEPIX bmk WG by the procurement teams at some WLCG sites*
 - For different computing architectures, *compare events per second per Watt* for one workload
 - Software infrastructure: possible nice extension to HEP-Benchmarks (HEPIX benchmarking WG)
 - Hardware measurement: need some interaction with IT deployment/monitoring teams