Contribution ID: **39**   Type: **Oral**

Pepper –A Portable Parton-Level Event Generator for the High-Luminosity LHC

Wednesday, 13 March 2024 15:30 (20 minutes)

Parton-level event generators are one of the most computationally demanding parts of the simulation chain for the Large Hadron Collider. The rapid deployment of computing hardware different from the traditional CPU+RAM model in data centers around the world mandates a change in event generator design. These changes are required in order to provide economically and ecologically sustainable simulations for the high-luminosity era of the LHC. We present the first complete leading-order parton-level event generation framework capable of utilizing most modern hardware, and discuss its performance in standard-candle processes at the LHC.

Significance

This is the first time we present Pepper at a conference. It is the first production-ready portable parton-level event generator framework.

References

Experiment context, if any

Primary authors: Dr BOTHMANN, Enrico (U Goettingen); ISAACSON, Joshua; KNOBBE, Max (University of Göttingen); HOECHE, Stefan (Fermilab); CHILDERS, Taylor; GIELE, Walter

Presenter: Dr BOTHMANN, Enrico (U Goettingen)

Session Classification: Track 3: Computations in Theoretical Physics: Techniques and Methods

Track Classification: Track 3: Computations in Theoretical Physics: Techniques and Methods