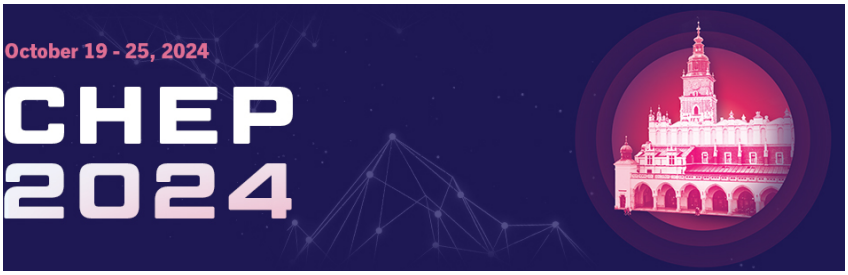

Contribution ID: **537** Contribution code: **THU 30** Type: **Poster**

Refining FastSim with Machine Learning

Thursday 24 October 2024 16:00 (15 minutes)

A growing reliance on the fast Monte Carlo (FastSim) will accompany the high luminosity and detector granularity expected in Phase 2. FastSim is roughly 10 times faster than equivalent GEANT4-based full simulation (FullSim). However, reduced accuracy of the FastSim affects some analysis variables and collections. To improve its accuracy, FastSim is refined using regression-based neural networks trained with ML. The status of FastSim refinement is presented. The results show improved agreement with the FullSim output and an improvement in correlations among output observables and external parameters.

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Session Classification: Poster session

Track Classification: Track 5 - Simulation and analysis tools