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AtlFast3, the ATLAS fast simulation tool in Run3

Tuesday, July 11, 2023 4:00 PM (20 minutes)

AtlFast3 is the new, high-precision fast simulation in ATLAS that was deployed by the collaboration to replace AtlFastII, the fast simulation tool that was successfully used for most of Run2. AtlFast3 combines a parametrization-based Fast Calorimeter Simulation and a new machine-learning-based Fast Calorimeter Simulation based on Generative Adversarial Networks (GANs). This presentation will show the latest development and status of this toolset tuned to the ATLAS Run 3 detector geometry. The presentation will show that the current fast simulation can reproduce the Geant4 inputs with higher accuracy. In particular, the simulation of jets of particles reconstructed with large radii and the detailed description of their substructure are significantly improved compared with its predecessor AltFastII. The GAN models are also largely improved compared with the version that was used in the published AtlFast3 paper (Comput Softw Big Sci 6, 7 (2022)).

Is this abstract from experiment?

Yes

Name of experiment and experimental site

ATLAS

Is the speaker for that presentation defined?

Yes

Details

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Internet talk

Yes

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