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FaDER - Assisting real-time track reconstruction for LHC experiments

The real-time track reconstruction task for LHC experiments shows a processing time which increases significantly as a function of the average number of proton-proton collisions per bunch crossing. The future upgrade to the High-Luminosity LHC (HL-LHC), with way higher levels of simultaneous collisions, could thus lead to a considerable growth in computational cost for the current trigger algorithms. To face this issue, a machine-learning-based technique to assist tracking by filtering out background hits is presented and characterized, as part of the FaDER project. The algorithm is based on a Convolutional Neural Network architecture, to target final deployment on FPGA boards.

Giorno preferito

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Primary authors: ZAIO, Alessandro (Istituto Nazionale di Fisica Nucleare); COCCARO, Andrea (Istituto Nazionale di Fisica Nucleare); SCHIAVI, Carlo (Istituto Nazionale di Fisica Nucleare)

Presenter: ZAIO, Alessandro (Istituto Nazionale di Fisica Nucleare)