IV International Workshop "Data life cycle in physics", DLC-2020

Contribution ID: 20

Type: not specified

Fast Simulation of Electromagnetic Calorimeter using Deep Learning

Tuesday, June 9, 2020 10:15 AM (15 minutes)

The simulation of particle showers in electromagnetic calorimeters with high precision is a computationally expensive and time consuming process. Fast simulation of particle showers using generative models have been suggested to significantly save computational resources. The objective of studies is to perform a fast simulation of particle showers in the Belle II calorimeters using deep learning techniques. In my study, particle showers simulated using the Geant4 simulation toolkit are used to train a generative deep learning model. Once the model is trained, the generative part of the model is used to generate particle shower simulations providing noise vectors as input. The generated particle showers are cross-checked with the Geant4 showers using various observables.

Authors: Mrs IRAKKATHIL JABBAR, Jubna; Prof. BERNLOCHNER, Florian; Dr GOLDENZWEIG, Pablo

Presenter: Mrs IRAKKATHIL JABBAR, Jubna

Session Classification: Session 3