Contribution ID: **19** Type: **Regular talk**

Hit-reco: ProtoDUNE denoising with DL models

Wednesday 21 October 2020 15:00 (20 minutes)

We present Hit-reco model for denoising and region of interest selection on raw simulation data from ProtoDUNE experiment. ProtoDUNE detector is hosted by CERN and it aims to test and calibrate technologies for DUNE, a forthcoming experiment in neutrino physics. Hit-reco leverages deep learning algorithms to make the first step in the reconstruction workchain, which consists in converting digital detector signals into physical high level quantities. We benchmark the artificial intelligence based approach against traditional algorithms implemented by the DUNE collaboration. We investigate the capability of graph convolutional neural networks, while exploiting multi-GPU setups to accelerate training and inference processes.

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Session Classification: Workshop

Track Classification: 1 ML for data reduction : Application of Machine Learning to data reduction, reconstruction, building/tagging of intermediate object