

DeepTreeGANv2: Iterative Pooling of Point Clouds - Poster

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In High Energy Physics, detailed and time-consuming simulations are used for particle interactions with detectors. To bypass these simulations with a generative model, the generation of large point clouds in a short time is required, while the complex dependencies between the particles must be correctly modelled. Particle showers are inherently tree-based processes, as each particle is produced by the decay or detector interaction of a particle of the previous generation.

In this work, we present a significant extension to DeepTreeGAN, featuring a critic, that is able to aggregate such point clouds iteratively in a tree-based manner. We show that this model can reproduce complex distributions, and we evaluate its performance on the public JetNet 150 and CaloChallenge datasets.

Two papers under review are available here:

<https://cernbox.cern.ch/s/WoNDFxdOiKpg0fG>

Would you like to be considered for an oral presentation?

Primary author: Mr SCHAM, Moritz (Deutsches Elektronen-Synchrotron (DE))

Co-authors: KACH, Benno (Deutsches Elektronen-Synchrotron (DE)); KRUCKER, Dirk (Deutsches Elektronen-Synchrotron (DE)); BORRAS, Kerstin (DESY / RWTH Aachen University); SCHNAKE, Simon (Deutsches Elektronen-Synchrotron (DE))

Presenter: Mr SCHAM, Moritz (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Poster Session

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