Contribution ID: **24** Type: **not specified**

Quark-gluon discrimination with point clouds

Wednesday 15 January 2020 11:30 (20 minutes)

Quark-gluon tagging refers to the task of identifying the origin of a jet as produced from the hadronization of a gluon or a quark. Common methods rely on jet constituent properties to disentangle the two objects to varying degrees of success. In this talk an innovative method of classifying jets according to its constituents is introduced. The method uses the information of the constituents to build a graph-based neural network aided by attention mechanisms. The implementation is similar to the one presented in [1], achieving an improved performance for the methods described in [2].

[1] C. Chen, L. Z. Fragonara, and A. Tsourdos, *Gapnet: Graph attention based point neural network for exploiting local feature of point cloud*, 2019.
[2] H. Qu and L. Gouskos, ParticleNet: *Jet Tagging via Particle Clouds*, [arXiv:1902.08570]

Author: MIKUNI, Vinicius Massami (Universitaet Zuerich (CH))

Co-author: CANELLI, Florencia (Universitaet Zuerich (CH))

Presenter: MIKUNI, Vinicius Massami (Universitaet Zuerich (CH))

Session Classification: Architectures