

Conditional generative networks for pure quark and gluon jets

Tuesday 1 November 2022 16:50 (20 minutes)

The separation of quarks and gluons is of key interest at hadron colliders. While it is only possible to obtain mixed samples of quark and gluon jets from experimental data, some recent works have proposed methods for disentangling the underlying distributions in an unsupervised manner. However, these approaches typically lack a generative model for the separated distributions. In this work we provide a framework based on conditional generative networks that is able to separate mixed samples of quark and gluon jets. We present results using normalising flows and generative adversarial networks and discuss how the models could be used to enhance quark/gluon classification at colliders.

Primary authors: ORE, Ayodele; Prof. DOLAN, Matthew (University of Melbourne)

Presenter: ORE, Ayodele

Session Classification: Generative Models – Particle Level