

Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Identifying Jets Using Linear Discriminant Analysis¹ SOFIA CHECA, HELEN CAINES, BENJAMIN ROSAND, Yale Univ — In order to shed light on the nature of Quark Gluon Plasma (QGP), we utilize the same machine learning principles that are used in image recognition to distinguish among different types of jets, namely jets from PYTHIA-generated proton-proton collisions and quenched jets from heavy ion collisions. We represent jet data as pixelated images, and these jet images are run through a series of preprocessing steps so as to standardize them as much as possible. Next, we use a Linear Discriminant Analysis (LDA) to distinguish between these jet images. The LDA is able to discern quite well among jets that come from different types of collisions.

¹Yale College Freshman Summer Research Fellowship in the Sciences Engineering

Sofia Checa
Yale Univ

Date submitted: 01 Aug 2017

Electronic form version 1.4