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Identifying Jets Using Artifical Neural Networks[1] BENJAMIN
ROSAND, HELEN CAINES, SOFIA CHECA, Yale University — We investigate
particle jet interactions with the Quark Gluon Plasma (QGP) using artificial neu-
ral networks modeled on those used in computer image recognition. We create jet
images by binning jet particles into pixels and preprocessing every image. We an-
alyzed the jets with a Multi-layered maxout network and a convolutional network.
We demonstrate each network's effectiveness in differentiating simulated quenched
jets from unquenched jets, and we investigate the method that the network uses
to discriminate among different quenched jet simulations. Finally, we develop a
greater understanding of the physics behind quenched jets by investigating what the
network learnt as well as its effectiveness in differentiating samples.

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