

10th International Workshop on Boosted Object Phenomenology, Reconstruction and Searches in HEP (BOOST 2018)

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On the Topic of Jets

Thursday, July 19, 2018 9:50 AM (25 minutes)

I discuss a new framework to identify underlying classes of jets directly from data without input from simulation or theory. Due to a mathematical connection between mixed samples of jets and emergent themes in documents, statistical methods from topic modeling can be used to extract “jet topics” from data. I apply the jet topics method to extract quark and gluon multiplicity distributions from simulated Z+jet and dijet samples. I compute the jet topics to leading logarithmic accuracy for jet mass and perturbative multiplicity and discuss the relevance for defining quarks and gluons. I also discuss the potential to directly adapt any machine-learned jet tagger as a jet fraction and topic extractor.

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