

Are Jets Universal

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THIS IS A PLACEHOLDER FOR A LETTER OF INTEREST

The production and properties of jets are a mainstay of QCD physics. Jets are typically associated with colored objects such as quarks and gluons that produce collimated sprays of hadrons via parton shower and hadronization processes. The reconstruction, identification, and calibration of jets are a key part of the physics program at all future lepton and hadron colliders.

However, there is no simple definition of a “jet” – jets are the result of a computer algorithm. Algorithms

can be optimized for specific measurements although the universality of the algorithm across lepton- & hadron-collider environments and experimental & theoretical contexts needs to be understood. Correlations within and between jets, such as the interactions between colored objects or the substructure produced by the decays of heavy particles, can be exploited to extract additional information about the underlying QCD interaction. This paper outlines some, but not all, of the key issues that will be explored as part of the Snowmass effort.