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Jet Fragmentation and Fractal Observables

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I will discuss fractal jet observables, which are collinear-unsafe but can be described by generalizing the formalism of fragmentation functions. Generalized fragmentation functions (GFFs) are nonperturbative objects with a calculable RG running. In contrast to the linear DGLAP equations for ordinary fragmentation functions, GFFs evolve nonlinearly, since they encode correlations among subsets of hadrons in a jet. I review some special cases of generalized fragmentation functions already in the literature, including jet charge and track functions. I then present new fractal observables based on hierarchical clustering trees, which exhibit promising performance for discriminating quark jets from gluon jets.

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