

Phenomenology 2021 Symposium



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SMEFT Effects on the Angular Orientation of Jet Splitting Products.

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We explore features in the orientation of jet splitting products relative to the dijet production plane, with a focus on effects induced by “non-interfering” new physics operators in the standard model effective field theory (SMEFT). We construct an asymmetry variable by integrating the expected angular shape with the differential cross section. This search is sensitive to precisely one CP-conserving Wilson coefficient in the SMEFT, and it is also relatively unaffected by EFT interpretation/theory errors, making it nicely complementary to other searches. We consider competing contributions to the asymmetry from next-to-leading-order effects in QCD and showering of leading-order processes, and characterize signal visibility as a function of luminosity, scale, and systematic uncertainties.

Summary

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