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Precision Top Mass Determination at the LHC with Jet Grooming

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We show how the top mass can be extracted kinematically using cross sections for event shapes observables calculated using effective field theory methods. With the help of Soft Drop grooming done at a level that does not disturb the radiation that can modify the top mass definition, while still isolating the top jet, we obtain a distribution that is only mildly sensitive to the underlying event and initial state radiation. The data from LHC for top jets can thus be made to look very similar to e^+e^- collisions, and we compare Pythia results with those from our effective theory predictions.

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