“Towards precision physics with jet substructure”

Abstract: I will discuss some recent work on using hadronic final state objects at the LHC both for measurement of SM parameters and bounding of higher-dimension operators in the SM effective field theory. I will describe how modern machine learning techniques will allow high-pT Higgs bosons decaying to the bb final state to be used for both measurement of the SM rate and to search for the effects of higher-dimension operators that are impossible to disentangle in inclusive measurements. I will also discuss the possibility of a future measurement of the W boson mass in a purely hadronic channel, touching on reasons to pursue such a strategy both from the point of view of SM parameter extraction and greater understanding of higher-order and nonperturbative QCD effects.