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Identification of jets originating from high-momentum $H \rightarrow b\bar{b}$ RIZKI SYARIF, Brown Univ, CMS COLLABORATION — As the LHC operates at 13 TeV during Run II, more particles are produced with higher energies and subsequently decay into products that are observed as jets with smaller angular separations between them. A Higgs (H) boson produced in this highly boosted regime will most of the time decay into a pair of b quarks observed as jets that appear to be merged and collimated as a single "fat" jet. Previous methods were not specifically designed to be able to identify these boosted objects. Using multivariate analysis, CMS has developed a new algorithm for identifying a boosted H decaying to a pair of b quarks. We present the development, performance and validation of the boosted $H \rightarrow b\bar{b}$ tagger. We show that this tagger performs significantly better than earlier methods used in CMS.

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