g→ccbar update

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Contamination from single-b jets

- ~30% of displaced dimuon-tagged jets are single-b jets (from simulation)

- Several checks to rule out possibility that this is an artifact of the "truth-level" heavy-flavor counting in CMSSW

- PYTHIA8 studies by Abraham corroborated the fractions we see in CMS samples, as well as identifying the main decay chains

- Bulk of the single-b contamination comes from two broad categories:

  1) $B \rightarrow (D \rightarrow \mu^{\pm} + X) + \mu^{\mp} + X$
  2) $B \rightarrow (D \rightarrow \mu^{\pm} + X) + (D^{*} \rightarrow \mu^{\mp} + X) + X$

- Goal now is to loosen muon DCA rectangular cuts in favor of a BDT

  Reforesting with additional SV-in-jet & tracking-in-jet information to train a BDT (number of tracks in SV, decay length of SV, Chi2 of SV fit, muon DCA, etc)