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b-tagging Algorithms in the CMS experiment

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The identification of b-jets is an important ingredient in characterizing top quark events and many new physics scenarios. The b-tagging algorithms developed within the CMS experiment are mainly based on the large lifetime of b-hadrons. The discriminators and variables defined by the various algorithms which characterize b-jets (e.g. track impact parameter, vertex properties) have been studied using data and compared to expectations from Monte Carlo simulations. In addition detailed studies to optimize track selection and assignment to the jet have been performed in different running conditions and compared with simulations. These studies have led to improvements and optimization of the software tools for the high event pileup scenarios during the 2011 LHC running.

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