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## New method for data-driven top quark mass measurements at the LHC

A new method for a data driven determination of the mass of the top quark  $m_t$  is proposed. It uses in  $t\bar{t}$  events selected in the lepton+jets decay mode the recently proposed distribution of  $R_t = m_t/m_W$  calculated from selected jet triplets associated with the hadronically decaying top quark. The jets stemming from the hadronic W decay are found either by requiring one b-tagged jet in the triplet or by associating the two closest jets in top rest frame with the W. The distribution of  $m_t$  from the same jet triplets is used to define sideband and signal regions. Events from the sidebands in  $m_t$  can be used to constrain the shape of the combinatorial background distribution in  $R_t$ . The MC@NLO Monte Carlo generator and a simple model for the dominant experimental effects are used to study the prospective performance of the method.

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