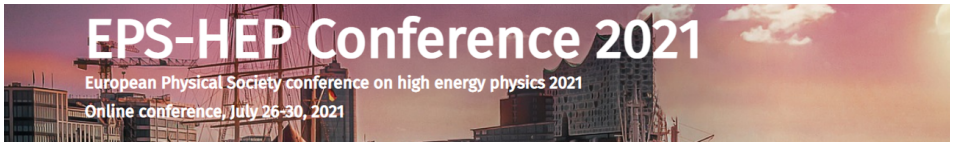

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Search for light charged Higgs boson in t -> H+b (H+ -> cb) decays with the ATLAS detector at LHC

A search for light charged Higgs boson (m_H+ = 60-160 GeV) in t to bH+ is presented. The analysis focuses on top-quark pair events in which one top quark decays to Wb, with the W boson decaying leptonically, and the other top quark decays to bH+, with H+ decaying subsequently to a charm and a bottom quark (H+ to cb). The search is based on pp collisions at sqrt(s) = 13 TeV recorded by the ATLAS detector at the LHC and uses an integrated luminosity of 139/fb. The process results in the lepton-plus-jets final state, characterized by an isolated electron or muon and at least four jets. The search exploits the high b-jet multiplicity in signal events and employs a neural network discriminant that uses the kinematic differences between the signal and the background, which is dominated by a top-quark pair production.

Collaboration / Activity

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