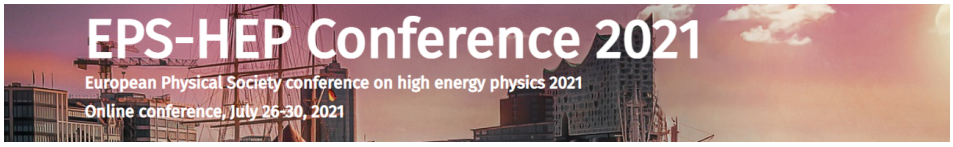


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# Search for doubly and singly charged Higgs bosons decaying into vector bosons in multi-lepton final states with the ATLAS detector using proton-proton collisions at 13 TeV

This poster presents a search for charged Higgs bosons decaying into WW or ZW bosons, involving experimental signatures with two leptons of the same charge, or three or four leptons with a variety of charge combinations, missing transverse momentum and jets. Some focus will be given on the same-charge leptons channel signature. A data sample of proton–proton collisions at a centre-of-mass energy of 13 TeV recorded with the ATLAS detector at the Large Hadron Collider between 2015 and 2018 is used. The data correspond to a total integrated luminosity of 139/fb. The search is guided by a type-II seesaw model that extends the scalar sector of the Standard Model with a scalar triplet, leading to a phenomenology that includes doubly and singly charged Higgs bosons. Two scenarios are explored, corresponding to the pair production of doubly charged H++ (or H–) bosons, or the associated production of a doubly charged H++ boson and a singly charged H+ boson. No significant deviations from the Standard Model predictions are observed. H++ bosons are excluded at 95% confidence level up to 350 GeV and 230 GeV for the pair and associated production modes, respectively.

## Collaboration / Activity

ATLAS

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