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Search for a heavy di-photon resonance in association with b-jets with the ATLAS detector at the LHC

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We search for a heavy resonance decaying into diphoton in association with at least one b jet. The search uses Run II proton-proton collision data with an integrated luminosity of 139 fb^{-1} recorded by the ATLAS experiment at a centre-of-mass energy of $\sqrt{s} = 13\text{ TeV}$ during 2015 to 2018 at the Large Hadron Collider. Three models are tested in this final state. A Higgs boson like heavy scalar X produced with top quarks, b quarks or Z boson decaying into $b\bar{b}$ are examined. In this Analysis, we setup limits on production cross-section times branching ratio on these models for the resonance mass ranging from 180 GeV – 1.5 TeV .

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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