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Search for the non-resonant Higgs-pair production in $\ell^+\ell^-\ell^+\ell^-$ final state at $\sqrt{s} = 13$ TeV in the ATLAS detector

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A search for the non-resonant production of a pair of the Standard Model Higgs boson h via gluon-fusion, $gg \rightarrow hh$, is performed. Each Higgs boson decays to either $W^+W^-W^+W^-$, ZZZZ or ZZW^+W^- leading to $4\ell + X$ in the final state. The ℓ could be an electron or a muon, and X is missing transverse energy or jets. The b-tagged as jets is vetoed in this analysis. The search uses the data at a centre-of-mass energy of 13 TeV collected by the ATLAS detector between 2015-2018 at the Large Hadron Collider. Cut-based and multivariate analyses are used to exploit the signal.

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

Yes

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

PhD

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