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The new Higgs particle in the H->ZZ*->4l searches with the ATLAS detector

This poster presents updated results and measurements of the properties of the newly observed Higgs particle in the decay channel H->ZZ*->l+l-l'+l'- ,where l,l'=e or μ. The analysis is based on 4.6 fb-1 and 20.7 fb-1of proton-proton collisions at √7 TeV and √8 TeV, respectively, recorded with the ATLAS detector at the LHC. An excess of events over background is observed at mH = 124.3 GeV with a significance of 6.6 standard deviations. The mass is measured to be mH = 124.3+0.6-0.5 (stat) +0.5-0.3 (syst) GeV and the signal strength at this mass is found to be μ = 1.7+0.5-0.4 . A spin-parity analysis is also performed: the Higgs-like boson is found to be compatible with the SM expectation of 0+, when compared pair-wise with 0-, 1+, 1+-, 2+ and 2-.

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