

Search for invisible decays of the Higgs boson and for dark matter with the ATLAS detector

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The total decay width of the Higgs has not yet been constrained precisely, which allows for up to 11% of the branching fraction to be from beyond the standard model decays, so the Higgs Decay represents one possible way for Dark Matter(DM) searches. This talk will discuss the search for invisibly decaying Higgs boson or DM particles produced in association with a Z boson that decays into an electron or muon pair in pp collisions at $\sqrt{s} = 13\text{TeV}$ corresponding to an integrated luminosity of 139fb^{-1} collected with the ATLAS detector during the 2015-2018. Z+Higgs boson(ZH), Mono-Z spin-1 simplified models and 2HDM+a models are involved in this analysis, and the observed events number is consistent with the Standard Model prediction. The upper limit on the branching ratio for the Higgs to invisible particles is also updated.

Are you are a member of the APS Division of Particles and Fields?

Yes

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