

Differential cross section for Higgs boson production in 4 lepton channel at LHC and kT factorisation approach

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We study the inclusive Higgs boson production cross section within the QCD kT factorization approach where the intrinsic transverse momentum effect of gluons is taken in to account. Differential cross section for the process $pp \rightarrow H \rightarrow ZZ^* \rightarrow 4\ell$ is estimated considering gluon to be off-shell and compared with the usual QCD results obtained within collinear factorization approach. Unintegrated parton distribution functions are used to give an estimates. The results are compared with the recent experimental data from the ATLAS collaboration. These results are useful in constraining and exploring the unintegrated parton distribution of gluon in the proton.

Presenter: RAWOOT, Vaibhav

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