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Parameterization of Higgs boson STXS bins for the measurement of its self-coupling

Higgs pair production processes provide the direct probe to the Higgs boson self-coupling (λ_{3H}). However, as well known such a processes have a small production cross section. It is also known that single Higgs processes indirectly depends on λ_{3H} , thus an alternative method to measure the λ_{3H} is considering λ_{3H} -dependent NLO EW corrections in single Higgs processes. The magnitude of these corrections are encoded by some process and kinematic-dependent coefficients named as C_1 . In the following, an overview of the determination and parametrization of the C_1 coefficients and K-factors in STXS bins performed by ATLAS and CMS are shown in connection to the latest H+HH combination results with full Run2 dataset.

Collaboration / Activity

ATLAS

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