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Higgs Pseudo-Observables

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Starting from the gauge invariant definition of complex pole, the relation between physical observables measured at LHC and Tevatron and standard model Higgs pseudo-observables is analyzed. This leads to new definitions for the production cross section and the partial decay width, which do not violate first principles. Their computation requires the analytical continuation of Feynman loop integrals from real to complex internal masses and complex Mandelstam invariants. The numerical relevance of the result is shown for Higgs masses up to 600 GeV.

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