

PAUL SCHERRER INSTITUT



Particle Theory Seminar

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“ W^-H^+ production and CP asymmetry at the LHC”

Thursday, December 16, 2010, 11:30

WBGB/021

Abstract:

The dominant contributions to W^-H^+ production at the LHC are the tree-level $b\bar{b}$ annihilation and the gg fusion. We perform for the case of the complex MSSM a complete calculation of the NLO EW corrections to the $b\bar{b}$ annihilation channel and a consistent combination with other contributions including the standard and SUSY QCD corrections and the gg fusion, with resummation of the leading radiative corrections to the bottom-Higgs couplings and the neutral Higgs-boson propagators. We observe a large CP-violating asymmetry, arising mainly from the gg channel. The effects of the phases of the soft SUSY-breaking parameters on the total cross section are found to be large.