

PAUL SCHERRER INSTITUT



Particle Theory Seminar

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“QCD and SUSY-QCD Corrections to Dark Matter
Annihilation in the Higgs Funnel”

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Abstract:

The calculation of the dark matter relic density within supersymmetric (SUSY) models allows to obtain additional constraints on the SUSY parameter space with respect to collider experiments. As new cosmological high precision experiments are to be launched in a near future, higher order corrections to the involved (co)annihilation cross sections are important.

I will present the complete calculation of QCD and SUSY-QCD corrections to neutralino pair annihilation into $b\bar{b}$ pairs through the exchange of a pseudoscalar Higgs boson, which is the dominant channel in the A-funnel region of the mSUGRA parameter space. After presenting the analytical results, I will discuss the effect of the corrections on the annihilation cross section and the neutralino relic density, as well as the influence of the simultaneously corrected width of the pseudoscalar Higgs boson.