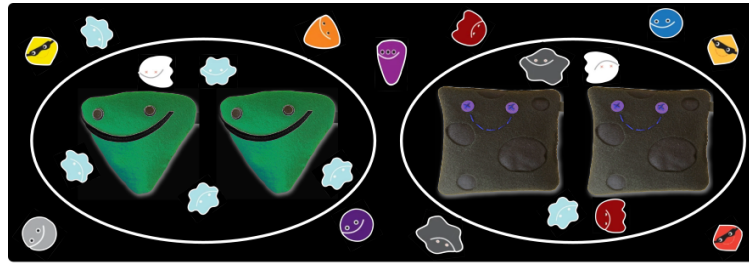


Quarkonia meet Dark Matter



Contribution ID: 13

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Electroweak WIMP annihilation, resummed beyond LO with non-relativistic dark matter EFT and SCET

Thursday 17 June 2021 21:10 (40 minutes)

This talk approaches electroweak WIMP annihilation from the perspective of the EFT for quarkonium annihilation. After discussing the similarities and differences, I cover next-to-leading order corrections to the potential between static sources with $SU(2) \times U(1)$ charge after electroweak symmetry breaking and their impact on the computation of the Sommerfeld-corrected dark matter relic density. Precise calculations of annihilation into an exclusive or semi-inclusive final state with electroweak charges requires in addition the summation of large electroweak Sudakov logarithms. The cosmic ray spectrum of high-energy photons with near maximal energy from dark matter annihilation is resummed at NLL' accuracy with SCET methods and combined with the NLO Sommerfeld effect.

Presenter: BENEKE, Martin

Session Classification: Main program