The Reach of Thermal Supersymmetric Dark Matter

Friday 6 July 2018 17:45 (15 minutes)

The three main successes of supernumerary are: naturlaness, gauge coupling unification, and a thermal dark matter candidate. Although experimental constraints on supersymmetry has pushed it to a region of parameter space which is less natural, the other two motivations for supersymmetry are still in tact. I will discuss under what conditions can we still get a good thermal dark matter candidate. The two main ways being gluino coannihilation and stop coannihilation. These methods of generating a thermal dark matter candidate will persist for dark matter masses up to of order 8 TeV, well beyond the reach of the LHC.

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Session Classification: Beyond the Standard Model

Track Classification: Beyond the Standard Model