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On bound state effects in dark matter freeze-out

Thursday 15 September 2016 14:00 (20 minutes)

The standard WIMP freeze-out analysis, based on Boltzmann equations, contains unknown theoretical uncertainties, which may start to matter now that many benchmark scenarios are strongly constrained by data. In this talk a few issues which are not always included in phenomenological analyses are elaborated upon. In particular the potential importance of strongly interacting bound states (e.g. of gluinos) is re-evaluated. The bound states are shown to significantly boost the co-annihilation rate with respect to a Sommerfeld-enhanced analysis, thereby perhaps helping to avoid overclosure.

Summary

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