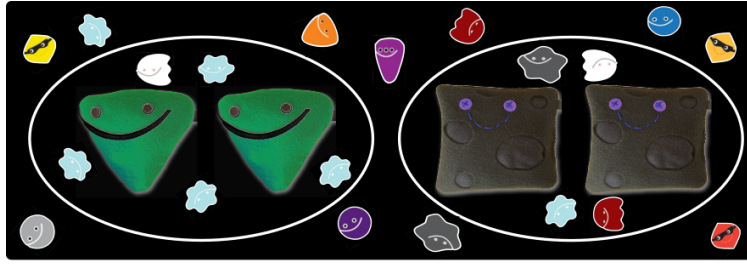


Quarkonia meet Dark Matter



Contribution ID: 11

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Dark matter and coloured co-annihilators: from the relic density to experimental constraints

Thursday 17 June 2021 20:00 (30 minutes)

In order to compute accurately the relic energy density of dark matter particles featuring co-annihilating partners, it is important to address the annihilations of the latter if the mass splitting is small. Coloured co-annihilators participating QCD interactions offer a rich phenomenology, and their dynamics in the early universe resembles that of heavy quarks in a quark-gluon plasma. Making contact with modern EFTs, we recast the thermal annihilation cross sections in terms of expectation values of 4-particle operators in NREFTs, the determination of which requires thermal potentials derived within pNRQCD. Experimental constraints on the parameter space compatible with the observed energy density are also discussed.

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Session Classification: Main program