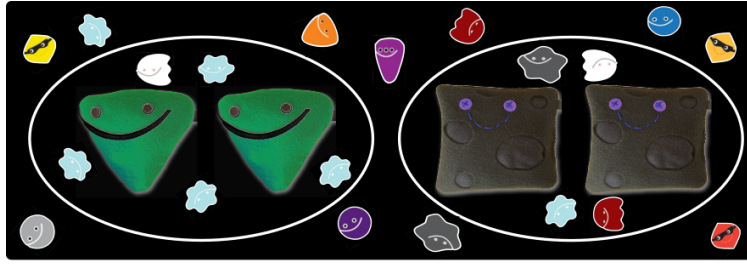


Quarkonia meet Dark Matter



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Bottomonium suppression in an open quantum system using the quantum trajectories method

Tuesday 15 June 2021 23:20 (35 minutes)

We solve the Lindblad equation describing the Brownian motion of a Coulombic heavy quark-antiquark pair in a strongly coupled quark-gluon plasma using the highly efficient Monte Carlo wave-function method. The Lindblad equation has been derived in the framework of pNRQCD and fully accounts for the quantum and non-Abelian nature of the system. The hydrodynamics of the plasma is realistically implemented through a 3+1D dissipative hydrodynamics code. We compute the bottomonium nuclear modification factor and compare with the most recent LHC data. The computation does not rely on any free parameter, as it depends on two transport coefficients that have been evaluated independently in lattice QCD. Our final results, which include late-time feed down of excited states, agree well with the available data from LHC 5.02 TeV PbPb collisions.

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Session Classification: Poster session (Gather town)