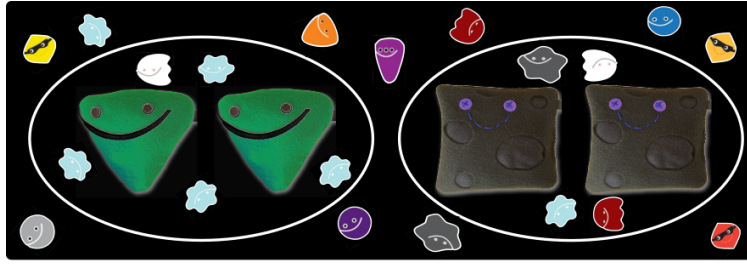


## Quarkonia meet Dark Matter



Contribution ID: 8

Type: not specified

# Potential non-relativistic QCD and open quantum system description of the non-equilibrium evolution of quarkonium inside the medium

*Wednesday 16 June 2021 20:40 (40 minutes)*

Quarkonium suppression is one of the probes of the formation of a quark-gluon plasma in heavy-ion collisions. Three phenomena influence the evolution of quarkonium in a medium: screening, collisions with medium partons and recombination. A formalism in which all these mechanisms can be described consistently is that of open quantum system. In this talk, I will review how to combine the open quantum system framework with Effective Field Theories that exploit the non-relativistic nature of quarkonium. I will discuss how to obtain a Lindblad equation that describes the evolution of the reduced density matrix of quarkonium and how Lattice QCD data can help to constraint the parameters of this equation. Efficient numerical methods to solve this evolution for phenomenological purposes will also be discussed.

**Presenter:** ESCOBEDO ESPINOSA, Miguel Ángel

**Session Classification:** Main program