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Particle Physics at LPTHE

Mardi 5 Septembre 2023, 14 :00
LPTHE, Library and Zoom (link in the comments)(Seminar in person in the library but also broadcast via Zoom at https ://cern.zoom.us/j/69627962245 ? pwd=ZVNxdFA0Q1BnLytTL3ZMNHcvcHdQUT09)
Domaines : hep-ph

Titre : *Exploring exponential growth scenarios for dark matter production*

Orateur : **Disha Bhatia (Instituto de Física, University of São Paulo (Brazil))**

Résumé : *In this talk, I shall focus on a particular non-thermal production mechanism where dark matter is produced through scatterings with the bath particles. The scatterings are such that they lead to the exponential growth in the early universe which stops with the reaction rate becoming Boltzmann suppressed. The results are computed in this scenario under the assumption that dark matter traces the equilibrium distribution of either the standard model or some hidden sector bath. Since dark matter is produced non-thermally the above assumption may not hold. We determine the distribution function of dark matter by solving the Boltzmann-equation and find that the obtained distribution exhibits different behavior from the equilibrium pattern. In particular, it is sensitive to the mechanism populating the initial density of dark matter.*
