



Contribution ID: 107

Type: **Talk**

Jet suppression at LHC: theory vs. experiment

Friday 26 July 2013 15:00 (20 minutes)

Suppression of light and heavy flavor observables is one of the most important probes in studying the properties of QCD matter created at RHIC and LHC experiments. We will here provide the most up-to-date light and heavy flavor suppression predictions for the available (2.76TeV) and the upcoming (~5TeV) Pb+Pb collisions at LHC. The predictions are based on our recent improvements in the energy loss calculations that take into account: i) theoretical formalism which includes finite magnetic mass [1], ii) finite size dynamical QCD medium [2], iii) numerical procedure which includes path-length and multi-gluon fluctuations [3]. We recently showed that these improvements may provide a reasonable explanation of the “Heavy flavor puzzle at RHIC” [3], while predictions for the available and the upcoming LHC data will be presented here.

[1] M. Djordjevic and M. Djordjevic, Physics Letters B 709, 229 (2012).

[2] M. Djordjevic, Phys. Rev. C 80, 064909 (2009) (highlighted in: M Gyulassy, Physics 2, 107 (2009)).

[3] M. Djordjevic, Phys. Rev. C 85, 034904 (2012).

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Session Classification: Quarkonia/Heavy Flavour