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Heavy quarks in a QCD plasma: energy loss or more baryons than mesons

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Abstract content

The properties of the nuclear modification factor for heavy flavors are usually attributed to the energy loss suffered by the heavy quark propagating in a QCD plasma. Nevertheless it is a bit surprising that the suppression of this factor is as strong as the one suffered by light flavors. In this work we show that when accounting for the momentum shift associated to the opening of the recombination channel to produce hadrons in the QCD plasma, it is not necessary to invoque such a strong energy loss. We show that when the heavy baryon to meson ratio is larger in nuclear than in poton collisions, data from RHIC and LHC for the nuclear modification factor of electrons coming from heavy flavor decays as well as for charmed masons can be accounted for.

Summary

Primary author(s) : Dr. CUAUTLE, Eleazar (ICN-UNAM)

Co-author(s) : CUAUTLE, Eleazar (ICN-UNAM)

Presenter(s) : Dr. CUAUTLE, Eleazar (ICN-UNAM); CUAUTLE, Eleazar (ICN-UNAM)

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