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Overview of heavy flavor measurements

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Heavy quarks are produced early in the heavy-ion collisions and they are expected to interact differently from light quarks with the Quark Gluon Plasma (QGP); therefore, they are unique probes of the QGP properties. Their production and elliptic flow are sensitive to the medium dynamics. These measurements for open heavy flavor sector are crucial for understanding the parton energy loss mechanism and the degree of thermalization of the QGP and to determine the transport coefficients of the QGP. Moreover, production of various quarkonia states can provide insight into thermodynamic properties of the QGP since different states are predicted to disassociate (due to the Debye screening of the quark-antiquark potential) at different temperatures.

In this talk, I review recent measurement of heavy flavor production in A+A and p+A collisions at RHIC and LHC. I discuss physics implications of these results and near-future prospects for heavy flavor physics.

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