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## Effective field theory approach to open heavy flavor production in heavy-ion collisions

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In this talk, we present our recent work on heavy flavor production in heavy ion collisions. We develop a version of Soft Collinear Effective Theory (SCET) which includes finite quark masses, as well as Glauber gluons that describe the interaction of collinear partons with QCD matter. With such a framework (labeled SCET<sub>M,G</sub>), we derive the massive splitting functions in the vacuum and the QCD medium associated with heavy quarks. The numerical effects due to finite quark masses are sizable and our results are consistent with the traditional approach to parton energy loss in the soft gluon emission limit. In addition, we present a new framework for including the medium-induced full splitting functions consistent with next-to-leading order calculations in QCD for inclusive hadron production. We show numerical results for the suppression of *D*-and *B*-mesons in heavy ion collisions and find good agreements with the available data from the LHC.

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