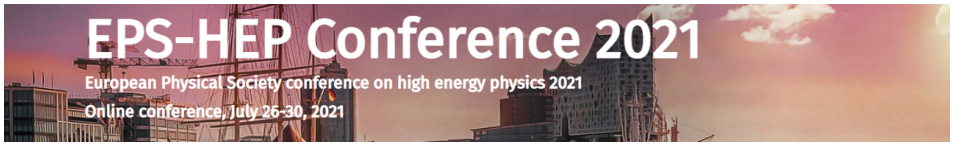

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Heavy flavored emissions in hybrid collinear/high energy factorization (12'+3')

Tuesday 27 July 2021 17:00 (15 minutes)

Heavy-flavored emissions have been always considered as an excellent channel to test properties of Quantum chromodynamics (QCD) at present and future colliders. Among different regimes, in which heavy-flavor production can be investigated, we focus our attention on the semi-hard one, where $s >> Q^2 >> \Lambda_{QCD}$ (s is the squared center-of-mass energy, $\{Q^2\}$ a (set of) hard scale(s) characteristic of the process and Λ_{QCD} the QCD mass scale). Here, we build predictions in a hybrid collinear/high-energy factorization, in which the standard collinear description is supplemented by the Balitsky-Fadin-Kuraev-Lipatov resummation of large energy logarithms. The definition and the study of observables sensitive to high-energy dynamics in the context of heavy-flavor physics has the double advantage of (i) allowing to get a stabilization of the BFKL series under higher order corrections and (ii) providing us with an auxiliary tool to investigate heavy-flavor production in wider kinematical ranges. Hence, we propose a scientific program on heavy flavor physics at high energy that starts from the production of open states, with the ultimate goal of considering bound states (such as heavy-light mesons and quarkonia).
In this talk, after a brief overview on the theoretical set-up of high-energy factorization in the case of heavy-quark production, I will present some recent phenomenological analyses involving heavy-quark open states as well as bound states.

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Collaboration / Activity

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