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Inclusive b-jet production with the ALICE detector at the LHC

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Heavy-flavor quarks created in ultra-relativistic heavy-ion collisions are mostly produced in hard QCD processes during the early stages of the reaction and their production is largely unaffected in the later stages. They interact with the hot nuclear matter throughout the whole evolution of the systems via semi-hard and soft processes such as energy loss via gluon radiations and collisions. Nuclear modification of heavy flavor quarks in pA systems provides insight into cold nuclear matter effects such as (anti-)shadowing and k_T-broadening, and also serves as a baseline for studies in AA collisions. On this regard, fully reconstructed heavy-flavor jets provide additional information on the flavor (or mass) dependence of fragmentation, color charge effects as well as insight into the contribution of gluon splitting on heavy-flavor production.

The ALICE detector at the LHC has excellent tracking capabilities which allow to identify displaced secondary vertices of B-hadron decays and hence enable the reconstruction of b-jets.

In this contribution, we will present p_{T}-differential b-jet production cross section in $\mathrm{p}-\mathrm{Pb}$ collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ TeV measured by the ALICE experiment. The NLO pQCD (POWHEG) predictions will be compared to the data.

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