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## **Open Charm Production in $p + p$ and $Pb + Pb$ collisions at the LHC**

*Monday 16 June 2014 17:00 (15 minutes)*

The phase transition from hadronic to partonic degrees of freedom in ultra-relativistic nuclear collisions is a central focus of experiments at the LHC. Heavy-flavor quarks are an ideal probe to study early dynamics in ultra-relativistic nuclear collisions. This contribution will present new results on the effects of strong longitudinal colour electric fields (SCF), shadowing, and quenching on the open prompt charm mesons production in central  $Pb + Pb$  collisions at  $\sqrt{s_{NN}} = 2.76$  TeV. This study is done within the framework of the HIJING/BBbar v2.0 model. We show that the above nuclear effects constitute important dynamical mechanisms in the description of experimental data. The strength of colour fields (as characterized by the string tension  $\kappa$ ), partonic energy loss and jet quenching process lead to a suppression factor for the open charm production in heavy-ion collisions consistent with recent published data. Predictions for beauty mesons will also be presented. \* Work supported by NSERC (Canada), the U.S. Department of Energy and by the Romanian Authority for Scientific Research

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