



Contribution ID: 194

Type: Poster

Heavy quark energy loss in p+p collisions at the LHC

Thursday 16 August 2012 16:00 (2 hours)

One of the most promising probes to study deconfined matter created in high energy nuclear collisions is the energy loss of (heavy) quarks. It has been shown in experiments at the Relativistic Heavy Ion Collider that even charm and bottom quarks, despite their high mass, experience a remarkable medium suppression in the Quark Gluon Plasma.

In this investigation we study the energy loss for heavy quarks in high multiplicity proton proton collisions at LHC energies. Although the colliding systems are smaller than compared to those at RHIC (p+p vs. Au+Au) the higher energy might lead to multiplicities comparable to Cu+Cu collisions at RHIC and thus might lead to a deconfined phase. This gives rise to a non-negligible suppression of heavy quark yields in elementary collisions. We study the dependence of this phenomenon on various quantities, such as the deconfinement energy density and the multiplicity reached in proton proton collisions and discuss this measurement as a probe to pin down parameters of the deconfinement phase transition.

This study is published in *Phys.Rev.Lett.* 107 (2011) 032302. (arXiv:1012.0764)

Author: Dr VOGEL, Sascha (Frankfurt Institute for Advances Studies)

Co-authors: AICHELIN, Joerg (Unknown); Prof. WERNER, Klaus (Subatech); GOSSIAUX, Pol (Subatech)

Presenter: Dr VOGEL, Sascha (Frankfurt Institute for Advances Studies)

Session Classification: Poster Session Reception

Track Classification: Heavy flavor and quarkonium production