SQM 2013
BIRMINGHAM

Contribution ID: **49**   Type: **Talk**

Nuclear Modification Factor and Elliptic Flow of Muons from Heavy-Flavour Hadron Decays in Pb–Pb Collisions at √ sNN = 2.76 TeV with ALICE

Tuesday 23 July 2013 16:20 (20 minutes)

Nuclear Modification Factor and Elliptic Flow of Muons from Heavy-Flavour Hadron Decays in Pb–Pb Collisions at √ sNN = 2.76 TeV with ALICE

X. Zhang for the ALICE Collaboration
Lawrence Berkeley National Laboratory, Berkeley, CA, U. S. A.

The LHC heavy-ion physics program aims at investigating the properties of strongly-interacting matter in extreme conditions of temperature and energy density, where the formation of the Quark- Gluon Plasma (QGP) is expected. In high-energy heavy-ion collisions, heavy quarks are regarded as efficient probes of the properties of the QGP as they are created on a very short time scale in initial hard scattering processes and subsequently interact with the medium.

In the high transverse momentum region, the suppression of the
heavy-flavour production, quantified by means of the nuclear modification factor, R_{AA}, defined as the ratio of the yield measured in Pb–Pb to that observed in pp collisions scaled with the number of binary nucleon-nucleon collisions, is used to study the heavy quark in-medium energy loss mechanisms. The heavy-flavour elliptic flow, the second order coefficient of the Fourier expansion of particle azimuthal distributions, provides insights on the degree of thermalization of heavy quarks in the deconfined medium and carries information on the path length dependence of parton energy loss in the low and high transverse momentum region, respectively.

ALICE, the only detector designed and optimized for heavy-ion physics at the LHC, measures open-heavy flavours at forward rapidity ($2.5 < y < 4$) using semi-muonic decays. The latest results on the nuclear modification factor and elliptic flow of muons from heavy-flavour decays in Pb–Pb collisions at $\sqrt{s_{\mathrm{NN}}} = 2.76$˜TeV will be presented.

Primary authors: ZHANG, Xiaoming (Lawrence Berkeley National Lab. (US)); ZHANG, Xiaoming (Lawrence Berkeley National Lab. (US))

Presenter: ZHANG, Xiaoming (Lawrence Berkeley National Lab. (US))

Session Classification: Heavy Flavour 1