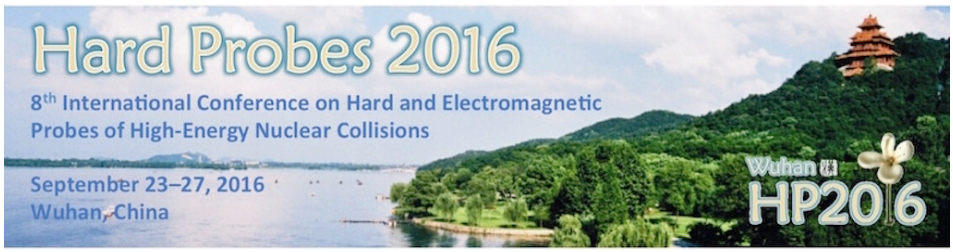

Contribution ID: **55** Type: **not specified**

Exploring the effects of bulk viscosity on dilepton radiation in high energy nucleus-nucleus collisions

Saturday, 24 September 2016 09:50 (20 minutes)

Bulk viscosity has recently been shown to play a major role in describing both photon [1] and hadron [2] observables at the Relativistic Heavy-Ion Cllider (RHIC) and the Large Hadron Collider (LHC). Thermal dilepton production is a particularly interesting electromagnetic probe that, up until now, has not been studied within such simulations. Using the differential nature of the dilepton spectrum, one can isolate radiation originating from different phases of the medium. The partonic sector emits high invariant-mass lepton pairs, while the hadronic sector produces lower invariant mass dileptons. Starting from the IP-Glasma initial conditions as in Refs [1,2], we investigate for the first time thermal dilepton production originating from Pb-Pb collisions at the LHC. A detailed study of the role bulk viscosity plays on the development of anisotropic flow and on thermal dilepton radiation is presented. As reference, a similar calculation will be performed at top RHIC energy, thus allowing comparisons with results from Pb-Pb collisions at the LHC to be made. Consequently, more robust conclusions regarding the role of bulk viscosity in high energy heavy-ion collisions will be drawn.

[1] Jean-François Paquet et al., Phys. Rev. C 93 no. 4, 044906 (2016)
[2] S. Ryu et al., Phys. Rev. Lett. 115 no. 13, 132301 (2015)

Summary

Presentation type

Oral

Primary author: VUJANOVIC, Gojko (The Ohio State University)

Presenter: VUJANOVIC, Gojko (The Ohio State University)

Session Classification: Parallel Session I: EM Probes (I)