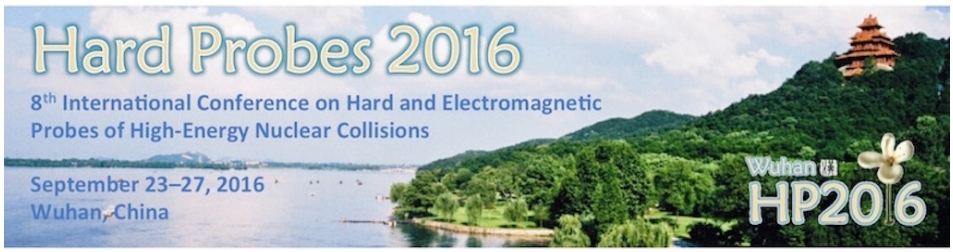

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A systematic study of electromagnetic radiation and of the collectivity in small quark-gluon droplets

Saturday 24 September 2016 09:30 (20 minutes)

We present a systematic study of electromagnetic radiation and of the hadronic observables in (p, d, ^{3}He)+Au collisions at RHIC energies and in p+Pb collisions at the LHC energy. Using a (3+1)-d viscous hydrodynamics + hadronic cascade hybrid framework, the effects of breaking the longitudinal boost-invariance on direct photon and hadronic observables are quantified. Predictions of thermal photon enhancement in high multiplicity pp collisions at 13 TeV and in the recent beam energy scan (d+Au collisions at RHIC energies) will be presented. The role of net baryon density and finite baryon diffusion on direct photon and flow observables will be highlighted for d+Au collisions at 19.6 GeV. The proposed thermal photon enhancement [1] and flow observables at low collision energies can serve as additional signatures for the existence of a hot quark-gluon plasma in small collision systems.

[1] C. Shen, J.-F. Paquet, G. S. Denicol, S. Jeon and C. Gale, Phys. Rev. Lett. 116, no. 7, 072301 (2016)

Summary

Presentation type

Oral

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