

Universality in High Energy Collisions of small and large systems

Friday, 31 July 2020 10:36 (24 minutes)

Recent experimental results in proton-proton and in proton-nucleus collisions at Large Hadron Collider energies show a strong similarity to those observed in nucleus-nucleus collisions, where the formation of a quark-gluon plasma is expected. We discuss the comparison between small colliding systems and nucleus-nucleus collisions, for: a) the strangeness suppression factor γ_s and yields of multi-strange hadrons; b) the average transverse momentum with particular attention to the low p_t region where soft, non-perturbative effects are important; c) the elliptic flow scaled by the participant eccentricity. The universal behavior in hadronic and nuclear high energy collisions emerges for all these observables in terms of a specific dynamical variable which corresponds to the entropy density of initial system in the collision and which takes into account the transverse size of the initial configuration and its fluctuations.

Secondary track (number)

06

Primary authors: IORIO, Alfredo (Institute of Particle and Nuclear Physics, Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic); SATZ, Helmut (Fakultat fur Physik, Universit"at Bielefeld, Germany); DANIELE, Lanteri (Dipartimento di Fisica e Astronomia - Universit"à di Catania - Italy); SPOUSTA, Martin (Institute of Particle and Nuclear Physics, Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic); CASTORINA, Paolo

Presenter: CASTORINA, Paolo

Session Classification: Heavy Ions

Track Classification: 07. Heavy Ions