Title:	Estimation of Pressure of Matter formed in Heavy-Ion Collision
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Abstract:	It is believed that after the Big-Bang, in early age of the universe, a hot dense soup of quarks and gluons was formed named QGP(Quark Gluon Plasma), having high energy density and number density. QGP is a fireball consist of quarks and gluons in the deconfined form. Due to high internal Pressure and Temperature it expanded and cooled down, the deconfined to-confined phase transition occurred and hadrons were formed resulting in the baryonic matter that we observe today. Study about this kind of a phase transition can lead us to understand the early stages of the universe. The promising technique to produce such state of matter in lab is by heavy-ion collisions. Due to complexity of underline theory of these partons i.e. QCD, we rely generally on other effective models like hydrodynamics and Sta tistical Thermodynamic approaches to study the system. The Thesis is based on 'Study of Calculation of Pressure' in formed QGP in heavy ion col lisions and final hadronic matter formed. Standard statistical models based on Boltzmann Gibbs distribution(B-G) which is known for its great success on non-interacting classically large systems. Since the number of particle produced in heavy-ion collisions are much less than that of Avogadro number, we need to use non-extensive statistical mechanics to esti mate thermal properties of matter formed. As the system undergoes collective expansion, to study the dynamics, hydrodynamics is used, as it provides a simple, intuitive descrip tion of dynamical collective behaviour of system under evolution in relativistic heavy-ion collisions. We will use generalised non-extensive statistics known as 'Tsallis-statistics' for the calculations. Tsallis statistics is based on generalization of B-G distribution which in particular limit gives back the standard statistics. For analysis we have used data generated by UrQMD simulator in hydro mode and experimental data extracted from HEPData and carried out the analysis using ROOT.
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