Contribution ID: **89** Type: **Parallel**

Thermal effects in the hadronic and photonic multiplicity distributions and correlations: A Thermo-Field Dynamic approach

Thursday, 18 February 2016 14:40 (20 minutes)

The existence of the Quark Gluon Plasma(QGP) requires that in the collision of heavy ions an initial fireball is formed which has a lifetime larger than typical hadronic time scale of 10^{-23} sec and that the temperature and volume of the fireball is sufficient to ensure that the Quark Hadron phase transition predicted by statistical QCD is achieved. Then the pions and photons emitted from this hot fire ball may carry information of the temperature and life time of the emitting region, and this may manifest itself in the correlation functions and multiplicities which can be modified by finite temperature. Thus it is important to find ways of incorporating finite temperature effects in multiplicity distributions and correlations. The Thermo field formalism is particularly useful in the description of parametric dynamical systems in which squeezing of quantum fluctuations is important. Quantum optical systems with Bose - Einstein thermal fluctuation properties are conventionally represented by density matrices and their evolution described by master equations. We apply the formalism of thermofield dynamics can be used to get the thermal counter parts of multiplicity distribution and correlations. We then compare the distribution to the Glauber Lachs distribution and calculate the chaoticity parameter. Comparison with current data is given.

Primary author: BAMBAH, Bindu A. (UNIVERSITY OF HYDERABAD, HYDERABAD, TELENGANA INDIA)

Co-author: MOGURAMPALLY, Naveen Kumar (UNIVERSITY OF HYDERABAD, HYDERABAD, TELENGANA INDIA)

Presenter: BAMBAH, Bindu A. (UNIVERSITY OF HYDERABAD, HYDERABAD, TELENGANA INDIA)

Session Classification: Session 18