Contribution ID: **106** Type: **Contributed Talk**

Criticality and nongaussian moments in heavy ion collisions

Tuesday, 28 June 2016 15:20 (20 minutes)

Heavy ion collision experiments search for a critical point in the phase diagram of nuclear matter by measuring non-Gaussian moments of baryon number. Universality of critical phenomena predicts that non-Gaussian moments are enhanced near a critical point.
We show that universality near a critical end point implies a characteristic relation between third- and fourth-order baryon susceptibilities χ_3 and χ_4, resulting in a banana-shaped loop when χ_4 is plotted as a function of χ_3 along a freeze-out line. Including the individual enhancements of χ_3 and χ_4 near a critical point, these features may be a consistent set of observations supporting the interpretation of baryon fluctuations data as arising from criticality.

On behalf of collaboration:

None

Primary authors: KOHYAMA, Hiroaki; DENG, Jian (Shandong University); CHEN, Jiunn-Wei; LABUN, Lance (University of Texas at Austin)

Presenter: LABUN, Lance (University of Texas at Austin)

Session Classification: QCD Phase Diagram