Strangeness in Quark Matter 2016



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## Criticality and nongaussian moments in heavy ion collisions

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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 fourthorder baryon susceptibilities  $\chi_3$  and  $\chi_4$ , resulting in a banana-shaped loop when  $\chi_4$  is plotted as a function of  $\chi_3$  along a freeze-out line. Including the individual enhancements of  $\chi_3$  and  $\chi_4$  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

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