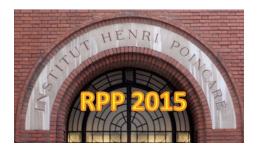
## Rencontre de Physique des Particules 2015



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## Fluctuation signatures of the QCD critical point

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Locating the QCD critical point is the goal of several major heavy ion collision experiments, and it may be possible to see signatures of critical behaviour in event-by-event fluctuations of conserved charges. We show characteristic peaks in the third  $\chi_3$  and fourth  $\chi_4$  fluctuation moments of baryon number as a function of chemical potential (or center of mass energy) and how they depend on proximity of freeze out to the critical point. In a model independent analysis, we explain qualitative features of the moments' dependence on chemical potential and temperature near the critical point, and we identify a few signatures, such as relative location of the  $\chi_3$  and  $\chi_4$  peaks, expected to be robust. Using the Gross Neveu model we provide a quantitative example of these predictions, which may support experimental observations of a peak in  $\chi_4$  as a signature of the critical point.

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Classification de Session: Posters [exhibited during the Rencontre]