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Baryon number conservation and cumulants of net proton distribution

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We discuss the effects of the global baryon and electric charge conservation on the cumulants of net baryon and net proton fluctuations [1], which are considered to be sensitive probes of the QCD critical point. We show that the cumulants are substantially suppressed if the conservation laws are taken into account. We propose a new observable that is not influenced by the global baryon conservation but is highly sensitive to the critical end point or the crossover.

[1] A. Bzdak, V. Koch, V. Skokov, arXiv:1203.4529 [hep-ph]

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