

# Cumulants from global baryon number conservation with short-range correlations

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The quantum chromodynamics (QCD) phase diagram is not yet well explored. In particular, there is a significant, theoretical and experimental, effort to search for the predicted first-order phase transition and the corresponding critical endpoint between the hadronic matter and quark-gluon plasma. The fluctuations of, e.g., net-baryon number, electric charge, or strangeness are known to be sensitive to the relevant critical phenomena. They are studied in relativistic heavy ion collisions using the cumulants and factorial cumulants. However, these fluctuations can be generated also by the effects not related to the phase transitions, e.g., the global baryon number conservation. This talk will present the baryon multiplicity cumulants in the subsystem generated by the global baryon conservation and short-range correlations. The way to obtain higher-order corrections will be discussed.

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