

Search for the critical point via intermittency analysis in NA61/SHINE

Thursday 5 September 2024 10:40 (20 minutes)

The existence and location of the QCD critical point are objects of both experimental and theoretical studies. The comprehensive data collected by NA61/SHINE during a two-dimensional scan in beam momentum and system size allows for a systematic search for the critical point - a search for a non-monotonic dependence of various correlation and fluctuation observables on collision energy and size of colliding nuclei.

Intermittency analysis is a statistical tool used in heavy ion collisions that includes the study of scaled factorial moments (SFMs) of multiplicity distributions in 2D transverse momentum space to detect power-law fluctuations and explore different aspects of the QCD phase diagram. In particular, proton intermittency has been used to locate the critical point of strongly interacting matter, and more recently, it has been used also to study the properties of QCD interactions using charged hadrons.

This contribution will present a summary of results in proton-proton intermittency, as well as the results on negatively charged hadrons intermittency from NA61/SHINE interactions.

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