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How to study the location of the critical point in the phase diagram of nuclear matter with the event generator EPOS 4 ?

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Within the framework of the exploration of the phase diagram of nuclear matter, the susceptibilities are useful tools to probe the existence of a 1st order phase transition and a possible critical endpoint. In this context, STAR collaboration recently published some results of variances and 2nd order susceptibility ratios for electric charge (Q), protons and kaons (the last 2 being used as proxies for baryonic number B and strangeness S). Hence, we plan to simulate Au+Au collisions with the event generator EPOS, in order to reproduce STAR analyses, and especially study the impact of hadronisation process and hadronic cascades on those observables. We show here our first results for some BES program reactions, obtained with a preliminary version of EPOS 4.

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