

Angular correlations of particle yield ratios

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Measurements of fluctuations allow one to study phase transitions and other collective phenomena in systems formed in high-energy hadronic collisions.

In this report, we will discuss properties of a recently proposed fluctuation observable, namely, the correlation coefficient between ratios of identified particle yields measured in two angular acceptance windows. With such an observable it is possible, for instance, to study the correlation between relative strangeness yield in separated rapidity intervals, which should be sensitive to the density of the fireball formed in A–A collisions. These correlations are also sensitive to various short-range effects, in particular, they are affected by spin statistics. We will show predictions from several models of pp and A–A collisions that include known effects, and these calculations will serve as baselines for the future measurements with this observable in real experimental data.

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