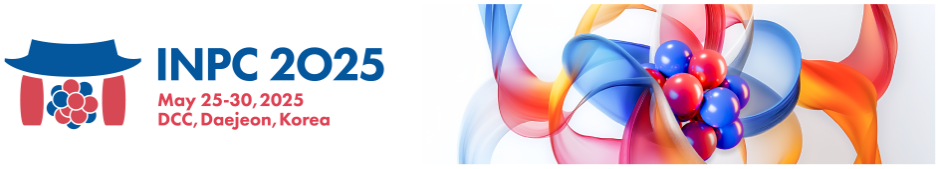

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Dynamical core-corona initialization in high-energy nuclear collisions

Tuesday, 27 May 2025 09:10 (25 minutes)

The dynamical core-corona initialization (DCCI) model [1] is a novel framework to describe the space-time evolution of both equilibrium (the core) and non-equilibrium (the corona) components in high-energy nuclear collisions in a unified mannter. The distinct feature of the DCCI model is to reproduce multiplicity dependence of the yield ratio between multi-strange hadrons and pions through a combination of the core and the corona components. This is crutial in describing the small multiplicity events such as p+p, p+A, and peripheral A+A collisions in which the local thermalization of the system is not expected to occur in the whole reaction region.

In this talk, I first show the fractions of the core and the corona components as functions of $dN_{\rm ch}/d\eta$ from the DCCI model and discuss that the core becomes dominant above $dN_{\rm ch}/d\eta \sim 20$ [1]. I next demonstrate the anomalous enhancement of the hadron yields in the very low p_T region measured experimentaly could be interpreted as the corona components from fragmentation [2]. I also discuss dynamical initialization of the baryon number and its influence on the fluctuations of the baryon number density in the transverse plane at midrapidity [3].

[1] Y. Kanakubo *et al.*, Phys. Rev. C **105**, 024905 (2022).
[2] Y. Kanakubo *et al.*, Phys. Rev. C **106**, 054908 (2022).
[3] S. Fujii *et al.* (work in progress).

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