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Strange and heavy hadrons production from coalescence plus fragmentation in AA collisions at RHIC and LHC

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We study the Λ_c/D ratio and p/ϕ at RHIC and LHC within a realistic implementation of coalescence model.
The evolution of the partonic stage is described by the relativistic Boltzmann equation tuned at a fixed shear-viscosity to entropy-density ratio η/s and a realistic equation of state.
Such an approach recovers the universal features of the ideal hydrodynamics.
In a coalescence plus independent fragmentation approach we calculate the p_T spectra and anisotropic flows v_n of the main hadrons:
$\pi, K, p, \bar{p}, \Lambda, D, \Lambda_c, \phi$ in a wide range of transverse momentum. Our approach correctly describes the baryon-to-meson ratios $p/\pi, \bar{p}/\pi, \Lambda/K$ that reach a value of the order of unit at $p_T \sim 3GeV$.
In particular we show that in a coalescence plus fragmentation approach one predicts a nearly p_T independent p/ϕ ratio up to $p_T \sim 4GeV$ followed by a significant decrease at higher p_T . Such a behavior is driven by a similar radial flow effect at $p_T < 2GeV$ and the dominance of fragmentation for ϕ at larger p_T.
Moreover in the same framework we evaluate the Λ_c/D ratio at RHIC and LHC finding a substantial enhancement with respect to pp collisions.

[1] S. Plumari, G. L. Guardo, F. Scardina, V. Greco, Phys.Rev. C92 (2015) no.5, 054902.

[2] S. Plumari, G. L. Guardo, V. Greco, J.-Y. Ollitrault, Nucl.Phys. A941 (2015) 87-96.

[3] V. Minissale, F. Scardina, V. Greco, Phys.Rev. C92 (2015) no.5, 054904.

[4] S. K. Das, J. M. Torres-Rincon, L. Tolos, V. Minissale, F. Scardina, V. Greco, Phys.Rev. D94 (2016) no.11, 114039.

List of tracks

Strangeness production at low baryon densities

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