QUARK MATTER 2015
Sep. 27 – Oct. 3, 2015 Kobe, Japan

Contribution ID: **507** Type: **Poster**

Quark coalescence from RHIC to LHC

Tuesday, 29 September 2015 16:30 (2 hours)

In a coalescence plus independent fragmentation approach we calculate the p_T spectra of the main hadrons $\pi, K, p, \bar{p}, \Lambda, \phi$ in a wide range of transverse momentum from low
p_T up to about 10 GeV.
We show that the approach correctly predicts the evolution of the p_T spectra from RHIC to LHC energy and in particular the baryon-to-meson ratios $p/\pi, \bar{p}/\pi, \Lambda/K$ that reach a peak value of the order of unit at $p_T \sim 3$ GeV, while p/ϕ remains nearly constant showing the mass against the quark number effect in the coalescence process.
Recombination of minijet partons with the partons from the QGP is also included and plays a role at $p_T \sim 2$—5 GeV where the baryon to meson anomaly is observed experimentally.
The more recent availability of experimental data up to $p_T \sim 10$ GeV for the spectra as well as for p/π, $\bar{p}/\pi$, Λ/K ratios allows to spot some lack of yield in a limited p_T range around 6 GeV.
Finally, we discuss also the origin of a significant breaking of the quark number scaling of the elliptic flow v_2.

Reference

[1] V. Minissale, F. Scardina and V. Greco,

"Hadrons from Coalescence plus Fragmentation in AA collisions from RHIC to LHC energy," arXiv:1502.06213 [nucl-th], to be published in Phys. Rev. C (2015).

Primary authors: GRECO, Vincenzo (University of Catania); SCARDINA, francesco (University of Catania, INFN - LNS)

Co-author: MINISSALE, Vincenzo (University of Catania, INFN-LNS)

Presenters: GRECO, Vincenzo (University of Catania); SCARDINA, francesco (University of Catania, INFN - LNS)

Session Classification: Poster Session

Track Classification: Collective Dynamics