Abstract Submitted
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Decay of charmed hadrons – SHARE with CHARM[1] MICHAL PETRAN, JOHANN RAFELSKI, University of Arizona — In Pb–Pb collisions at LHC, a rather large number of charm–anti-charm quark pairs, $N_{c\bar{c}} \equiv dN_{c\bar{c}}/dy$, is produced in initial hard parton collisions before the QGP phase emerges. Given $N_{c\bar{c}}$, we predict yields of all charmed hadrons using statistical hadronization method for $\sqrt{s_{NN}} = 2.76\,\mathrm{TeV}$ and foreseen $\sqrt{s_{NN}} = 5.5\,\mathrm{TeV}$, where, respectively, $N_{c\bar{c}} = 56$ and $N_{c\bar{c}} = 90$ has been predicted for 0–5% centrality. Based on experimental decay data, symmetry principles and plausibility arguments, we prepare a complete charmed hadron decay table. The CHARM module adds charm decay hadron multiplicity into SHARE, the statistical hadronization model implementation we use. SHARE with CHARM utility uses $N_{c\bar{c}}$ as an additional fit parameter when analyzing hadron production in heavy–ion collisions. We quantify the charm hadron decay contributions in the final hadron yields. We find that about 20% of charm is bound to strangeness and, as a consequence, charm decays contribute a significant fraction of multistrange hadron yields. Up to 20% of ϕ, 15% of Ξ and 15% of Ω yield is produced directly by charm decays, whereas non–strange particles are affected less.

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Michal Petran
University of Arizona

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