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, \(N_{\text{cc}} \equiv dN_{\text{cc}}/dy\), is produced in initial hard parton collisions before the QGP phase emerges. Given \(N_{\text{cc}}\), we predict yields of all charmed hadrons using statistical hadronization method for \(\sqrt{s_{NN}} = 2.76\) TeV and foreseen \(\sqrt{s_{NN}} = 5.5\) TeV, where, respectively, \(N_{\text{cc}} = 56\) and \(N_{\text{cc}} = 90\) 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 \(N_{\text{cc}}\) 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 \(\phi\), 15% of \(\Xi\) and 15% of \(\Omega\) yield is produced directly by charm decays, whereas non–strange particles are affected less.

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