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Particle-yield modification in jet-like azimuthal V^0 -hadron correlations in Pb-Pb collisions at $\sqrt{s_{\rm NN}}=5.02$ TeV with ALICE at the LHC

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The measurement of azimuthal correlations between two particles is a powerful tool to investigate the properties of strongly-interacting nuclear matter created in ultra-relativistic heavy-ion collisions. in particular, studying the near-side and away-side hadron yields associated with trigger particles can provide important information to understand both the jet-medium interaction and hadron production mechanism. We study two-particle correlations with $V^0(\,\mathrm{K_s^0},\Lambda/\overline{\Lambda})$ and charge hadrons as trigger particles of transverse momentum $8 < p_\mathrm{T,trig} < 16 \mathrm{GeV}/c$, and associated charged particles of $1\mathrm{GeV}/c < p_\mathrm{T,assoc} < p_\mathrm{T,trig}$ at mid-rapidity in pp and Pb–Pb collisions at a center-of-mass energy of 5.02 TeV per nucleon pair. After subtracting the contributions of the flow background v_2 and v_3 , the per-trigger yields are extracted for two-particle azimuthal differences $|\Delta\varphi| < 0.9$ on the near-side and $|\Delta\varphi-\pi| < 1.2$ on the away-side. The ratio of the per-trigger yields in Pb–Pb collisions with respect to pp collisions, I_AA , is measured in the near-side and away-side in the most central 0-10% collisions.On the near-side, a significant enhancement of I_AA from 1.5 to 2 for different particles species is observed at the lowest $p_\mathrm{T,assoc}$. On the away-side, suppression to the level of $(I_\mathrm{AA}\approx0.6)$ for $p_\mathrm{T,assoc}>3\mathrm{GeV}/c$ is observed as expected from strong in-medium energy loss while an enhancement reaching 2 at lowest $p_\mathrm{T,assoc}$. The data are compared to AMPT, HIJING and EPOS models. Most calculations qualitatively describe the near-side and away-side yield modification at intermediate and high $p_\mathrm{T,assoc}$.

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