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Charged particle spectra in Pb–Pb collisions and nuclear modification factors at $\sqrt{s_{NN}} = 5.02$ TeV measured with ALICE

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ALICE is an experiment dedicated to the study of heavy-ion collisions at the LHC, with the aim of understanding the physics of the hot and dense deconfined medium produced in such collisions. Since the start of its second phase of running the LHC is delivering collisions of protons and lead ions at the top energy of $\sqrt{s} = 13$ TeV for pp and $\sqrt{s_{NN}} = 5.02$ TeV for Pb–Pb collisions.

The study of inclusive charged particle spectra sheds light on parton energy loss in the medium by quantifying the suppression of hadron production at high transverse momentum (p_T). A common way to investigate this effect is the determination of the nuclear modification factor (R_{AA}) given by the ratio between a Pb–Pb centrality dependent p_T spectrum and a reference spectrum in pp collisions scaled by the number of binary collisions.

In this talk results on the transverse momentum distributions with ALICE are presented. A significant reduction of systematic uncertainties with respect to results at $\sqrt{s_{NN}} = 2.76$ TeV was obtained. Spectra and R_{AA} will be shown in dependence on centrality. In addition the results will be compared to current models.

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