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Interpretation of strange hadron production at LHC

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We present a highly successful description of all available particle yields in Pb–Pb collisions at 2.76 TeV measured by the ALICE experiment as a function of centrality. We find that our fit of π, K, p, Ξ and Ω within the framework of non–equilibrium statistical hadronization model is consistent with previous fits of Au–Au data at 62.4 and 200 GeV from RHIC. The more precise LHC data strongly support chemical non-equilibrium model and chemical freeze-out temperature of T ≈ 140 MeV. The high entropy content of the fireball suggests additional entropy production mechanism increasing with centrality, yet to be understood. Strangeness content of the fireball shows saturation already for small systems at LHC energy suggesting a chemically equilibrated QGP as a source of hadrons. Our results show universal hadronization conditions of the particle source, represented by critical pressure P ≈ 80 MeV/fm3 , energy density ε ≈ 0.5 GeV/fm3 and entropy density σ ≈ 3.3 fm-3. These conditions apply to both RHIC and LHC for all collision centralities, in which the fit procedure works.

Primary author: PETRAN, Michal (Czech Technical University (CZ))

Co-authors: LETESSIER, Jean (Laboratoire de Physique Theorique et Hautes Energies, Universite Paris 6, Paris 75005, France); RAFELSKI, Johann (University of Arizona); PETRACEK, Vojtech (Czech Technical University (CZ))

Presenter: PETRAN, Michal (Czech Technical University (CZ))

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