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Bulk properties of hot QCD matter at RHIC and LHC and Universal QGP hadronization condition

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The short lifespan of the QCD phase at RHIC and LHC suggests fast filamenting disintegration of the supercooled QGP state of matter. The ensemble of all produced hadrons carry information about the physical properties of the disintegrating QGP. For example the energy content is obtained evaluating the energy carried by all hadrons. Considering that many of the particles have not been measured, extrapolation of their yields have decisive impact on the result of the analysis of these 'bulk' properties. We present a strategy how to obtain precise description of the available data using a maximum-parameter phase space model. Our results show that the bulk properties at RHIC and LHC are extremely similar and do not differ significantly from high energy SPS results supporting the notion that bulk QGP at hadronization is governed by the same universal hadronization conditions characterized by a common pressure and energy density. We show that the chemical equilibrium model forcing hadron yields to equilibrate in the hadron phase fails both to describe the data and to produce consistent description of bulk properties across centrality and a wide energy domain, which we achieve.

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