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Strangeness Signature of Quark Gluon Plasma at LHC[1] JOHANN RAFELSKI, Department of Physics, University of Arizona — The Alice experiment at LHC has reported kaon and multistrange particle $\overline{\Xi}, \Xi, \overline{\Omega}, \Omega$ production multiplicity dN/dy at central rapidity, which we interpret in terms of the statistical hadronization particle production model. This allows the determination of the total strangeness per entropy yield as well as the prediction of not yet reported yields of particles such as single strange $\overline{\Lambda}, \Lambda$ and the multiply strange ϕ. We perform this analysis as function of collision centrality and show that for several most central triggers our analysis produces an outcome that is extraordinarily similar. We than use this insight to combine the pertinent data in order to determine the bulk properties of the fireball particle source with unprecedented precision. This helps to establish the hadronization pressure and hadronization energy density of the bulk. We further compare the volume of the fireball source dV/dy with that reported by HBT analysis in order to demonstrate that the LHC generated bulk matter must be expanding more violently, and that it breaks apart at a lower T than is the case at RHIC.

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Johann Rafelski
Department of Physics, University of Arizona

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