

Abstract Submitted
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Net-lambda fluctuations in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV in ALICE at the LHC¹ EJIRO UMAKA, Univ of Houston, ALICE COLLABORATION — One of the fundamental goals of heavy-ion collision experiment is to map out the temperature and baryon chemical potential parameters of the Quantum Chromodynamics (QCD) phase diagram at which chemical freeze-out occurs a point on the phase diagram when the chemical composition of the system is fixed. The cumulants of conserved quantities (net-charge, net-baryon, and net-strangeness) are directly related to the quark number susceptibilities calculated with lattice QCD. In a fluctuation analysis, the proxies for net-charge, net-baryon, and net-strangeness are net-pion, net-proton, and net-kaon respectively. The lambda particle consists of a strange quark and it is as well a baryon. Thus, the measurement of the cumulants of the net-lambda distributions can provide insight to the fluctuations of net-strangeness and net-baryon number. Moreover, by comparing the freeze-out parameters of the net-lambdas to that of the net-protons, inference can be made about what precipitates chemical freeze-out. That is, if chemical freeze-out is guided by the flavor of the quarks involved.

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