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Thermal hadron yields from a coupled-channel analysis

I shall present an analysis of the thermal composition of the $S=-1$ strange baryons using an S-matrix formulation of statistical mechanics. The thermal abundances are computed based on the density of states extracted from a coupled-channel model. The approach entails a consistent treatment of resonances and naturally incorporates nonresonant interactions and the contribution from some additional states beyond the listing of the PDG. Influences from beyond the elastic scatterings of elementary hadrons, i.e. quasi-two-body states and unitarity backgrounds will be examined. Lastly, constraints from thermal model analysis of the LHC hadron yields and the LQCD results on baryon strangeness correlations will be discussed.

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