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Centrality and Flavor Dependence of the Chemical Freeze-out of Light Nuclei in Heavy Ion Collisions via Statistical Hadronization FERNANDO ANTONIO FLOR, GABRIELLE OLINGER, RENE BELLWIED, University of Houston — Statistical Hadronization Models (SHMs) have successfully reproduced hadronic particle abundances over nine orders of magnitude in high energy collisions of heavy ions. Experimental particle yields at RHIC and the LHC serve as the cornerstone for extracting common freeze-out parameters in the QCD phase diagram – namely, the baryo-chemical potential (μ_B) and the chemical freeze-out temperature (T_{ch}) – via thermal fits in the SHM framework. The differences between the extracted T_{ch} values of light hadrons and the strange hadrons becomes a point of interest when including light nuclei and hypernuclei in the PDG2016+ hadronic spectrum. In this talk, I will present calculations of the freeze-out parameters from hadronic yields from STAR and ALICE via the Grand Canonical approach within the framework of the Thermal FIST package. I will show that nuclei and hypernuclei yields can both be excellently described within the SHM framework. Lastly, I will show that the inclusion of light nuclei and hypernuclei in the light and strange fits, respectively, are consistent with our previously shown T_{ch} values – differing by more than 10 MeV; providing evidence for a flavor-dependent freeze-out in the QCD crossover region.

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