Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Characterizing the chemical freeze-out in heavy-ion collisions by thermal-model analyses[1] JAMIE STAFFORD, University of Houston, PAOLO ALBA, Lucht Probst Assoc, GmbH, VALENTINA MANTOVANI-SARTI, Technical University Munich, JACQUELYN NORONHA-HOSTLER, University of Illinois Urbana-Champaign, PAOLO PAROTTO, University of Wuppertal, ISRAEL PORTILLO, CLAUDIA RATTI, University of Houston — We present results on the influence of hadronic resonances on the chemical freeze-out in heavy-ion collisions [1, 2]. By varying the number of particle states in our model calculations, we determine the effect of the hadronic spectrum on thermal fit parameters. Our input hadronic lists under study range from ones with relatively few particles to those that consider experimentally observed and theoretically predicted states. We calculate thermal fits of particle yields and net-particle fluctuations within the Hadron Resonance Gas model for each set of particle states. From these analyses, we extract the relevant freeze-out conditions for each set and confirm that the results are consistent between the two methods. Furthermore, we find that the presence of additional resonances tends to decrease the freeze-out temperature, while only mildly affecting the baryonic chemical potential. We also note that the inclusion of heavier resonances is not sufficient to eliminate the gap between the freeze-out conditions for light and strange particles. [1] P. Alba et al. Phys.Rev.C 101 054905 (2020) [2] R. Bellwied et al. Phys.Rev.C 99 034912 (2019)

[1]This material is based on work supported by the National Science Foundation under Grant No. PHY1654219.

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Date submitted: 04 Jan 2021 Electronic form version 1.4