

Abstract Submitted
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First Results from Hybrid Hadronization in Small and Large Systems¹ RAINER FRIES, Texas AM Univ, JETSCAPE COLLABORATION — Hybrid Hadronization is a new Monte Carlo package to hadronize systems of partons. It smoothly combines quark recombination applicable when distances between partons in phase space are small, and string fragmentation appropriate for dilute parton systems, following the picture outlined by Han et al. [PRC 93, 045207 (2016)]. Hybrid Hadronization integrates with PYTHIA 8 and can be applied to a variety of systems from $e^+ + e^-$ to A+A collisions. It takes systems of partons and their color flow information, for example from a Monte Carlo parton shower generator, as input. In addition, if for A+A collisions a thermal background medium is provided, the package allows to sample thermal partons that contribute to hadronization. Hybrid Hadronization is available for use as a standalone code and is also part of JETSCAPE since the 2.0 release. In this presentation we review the physics concepts underlying Hybrid Hadronization. We present calculations of hadron chemistry and fragmentation functions in small and large systems when Hybrid Hadronization is combined with parton shower Monte Carlos MATTER and LBT. In particular, we discuss observable effects of the recombination of shower partons with thermal partons.

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