

# Hard Probes 2018: International Conference on Hard & Electromagnetic Probes of High-Energy Nuclear Collisions

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## JETSCAPE 1.0: The first software release of the JETSCAPE collaboration

The JETSCAPE Collaboration (Jet Energy-loss Tomography with a Statistically and Computationally Advanced Program Envelope) has developed and released an innovative, modular and flexible event generator to be used by the heavy-ion community [1]. The wide range of physical processes that take place in a heavy-ion collision, coupled with the lack of consensus on the underlying physical mechanisms, require a modular and modifiable event generator that allows the user to focus on improving the description of one physical process within an ecosystem of standard implementations for the remaining components of the generator. The goal of the JETSCAPE project is the construction of such an event generator, coupled with Bayesian statistical techniques to ascertain the input parameters in comparison with a curated data set.

In this talk we highlight the performance of the year-1 release of the JETSCAPE software package, which consists of an overall framework program and several physics modules. The framework organizes the order in which different modules are called, how these can interact with each other, and how the final results are stored or written out. The physics modules provide implementations of the initial state, fluid dynamical simulations, hadronization routines and individual energy loss schemes [2] synchronized by the framework. We describe this simulation paradigm and the design choices made in construction of the framework.

[1] <https://github.com/JETSCAPE>

[2] S. Cao et al. [JETSCAPE Collaboration] Phys.Rev. C96 (2017) no.2, 024909.

### Summary

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