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## Hadronization reweighting and machine learning for hadronization

Developments in phenomenology, such as model variations, advances in color reconnection models, and the pursuit of precision tuning, alongside the growing demand for faster simulations to match the increasing luminosity at the LHC, have driven significant progress in string model-based hadronization simulations in PYTHIA. In this talk, I will present an overview of recent efforts to integrate generative models that emulate the Lund string, as well as advancements in hadronization algorithms aimed at accelerating simulations for rare processes. These initiatives are part of the broader work undertaken by the MLhad collaboration.

## Category

Theory

## Collaboration (if applicable)

MLhad

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