Interpreting jet results from RHIC and LHC

BJOERN SCHENKE, Brookhaven National Laboratory

Measurements of fully reconstructed jets, which are collimated bunches of high momentum hadrons, have become available at the LHC and RHIC and will be much improved with planned updates at RHIC. Jets can be understood as an experimental signature of high energy partons that were produced early in the collision. Comparing jet observables in central heavy-ion collisions to proton-proton collisions can tell us about the medium produced in heavy-ion collisions and the interactions of high energy partons with the medium. I present Monte-Carlo computations of jet observables in heavy-ion collisions at RHIC and LHC that are based on perturbative QCD interactions of high energy partons with a strongly coupled hydrodynamic medium. Monte-Carlo techniques allow for the most direct link of theoretical calculations to experimental observables. For example, jet reconstruction can be performed in exactly the same way. I compare the same set of jet observables at RHIC and LHC, looking for potential differences in the relevant physical processes at different collision energies.