

X-SCAPE as a universal Event Generator for $e+p$, $e+e^-$ and pp collisions

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In this talk we discuss using the X-SCAPE Monte Carlo event generator and Hybrid Hadronization to simulate particle production in a large variety of collision systems. New capabilities have been added to X-SCAPE to calculate deep inelastic scattering in $e + p$ collisions. Hybrid Hadronization combines quark recombination, applicable when distances between partons in phase space are small, and string fragmentation appropriate for dilute parton systems. It can therefore smoothly describe the transition from very dilute parton systems like $e^+ + e^-$ and $e + p$ to full $A + A$ collisions.

Here we present the results from tuning X-SCAPE to $e^+ + e^-$ and $p + p$ collisions. We include hadron, jet, and global event observables from the ALEPH, PHENIX, STAR, ALICE, and CMS collaborations. We also present first results from $e + p$ calculations compared to H1 and ZEUS data to validate X-SCAPE as an event generator for deep inelastic scattering.

Category

Theory

Collaboration

JETSCAPE

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