

Constraining Fragmentation Functions through photon-hadron production

Tuesday 3 October 2023 09:30 (30 minutes)

Fragmentation Functions (FF) are universal non-perturbative objects that model hadronization in some general kind of processes. They are mainly extracted from experimental data, hence constraining the parameters of the corresponding fits is crucial for achieving reliable results. As expected, the production of lighter hadrons is favoured w.r.t. heavy ones, thus we would like to exploit the precise knowledge of pion FFs to constraint the shape of kaon (or heavier) FFs. In this talk, we show how imposing specific cuts on photon-hadron production leads to relations among u-started FFs. For doing so, we rely on the reconstruction of momentum fractions in terms of experimentally-accessible quantities, exploiting machine-learning techniques. Also, we consistently introduce NLO QCD + LO QED corrections. Our results point towards an efficient strategy which might help to reduce heavy-hadron FFs uncertainties.

Author: Dr SBORLINI, German (Universidad de Salamanca e IUFFyM)

Presenter: Dr SBORLINI, German (Universidad de Salamanca e IUFFyM)

Session Classification: CPAN - Session Fisica Teórica

Track Classification: CPAN - Session Fisica Teórica