

- in diffractive DIS, diffractive dissociation \leftrightarrow elastic scattering of a $q\bar{q}$ -dipole. Large DDIS is the hallmark of a strongly absorptive target \leftrightarrow “saturation physics”.

Diffractive DIS/photoproduction on protons & nuclei is an important part of the EIC program.

- Our meeting; “Spectroscopy”:

What can diffractive production contribute to spectroscopy?

Why EIC? A lot of exclusive channels are accessible at JLAB

Glueball searches perhaps best in central exclusive at LHC

- Exclusive diffractive processes \leftrightarrow final states which contain only a few particles. A clean environment to study the produced system.
- the recent past: HERA: H1, ZEUS, Hermes
- the present:
 - RHIC, LHCb, ATLAS, CMS, ALICE: central exclusive (glueball searches), ultraperipheral (high energy photoproduction).
 - COMPASS: diffractive dissociation of pions, photons.

Diffraction Session

- Production of light vector & higher spin mesons: radial & orbital excitations of (say) ρ mesons show distinctive systematics of s-channel helicity violation.
Color dipole approach + light-front wave-functions: can be formulated also at low Q^2
Hard pQCD regime (large Q^2): chiral odd vs chiral even meson distribution amplitudes
- Diffractive photoproduction of tetraquarks/hybrids: unexplored (?) Larger transverse sizes: stronger nuclear absorption \rightarrow nuclei as another tool?
- Odd C-parity three gluon exchange: the Odderon.
Photo/electroproduction of C-even mesons in diffractive kinematics
Charge asymmetries in $\pi^+\pi^-$ -production
Problem: secondary Reggeons ($q\bar{q}$ exchanges), backgrounds...
- We haven't really much talked about "Primakoff-physics". Very similar event topologies as diffraction.
- The proton fragmentation region: dissociative processes, role of nucleon resonances. Are final states correlated with what happens in the current fragmentation region (i.e. hard vs. soft diffraction)?
- **What do we want/need?**
proton tagging!
rapidity gap "purity"— at least veto detectors
particle ID