Contribution ID: **62** Type: **not specified**

Diffractive electron-nucleus scattering and ancestry in branching random walks

We point out an analogy between diffractive electron-nucleus scattering events, and realizations of one-dimensional branching random walks selected according to the height of the genealogical tree of the particles near their boundaries. This correspondence is made transparent in an event-by-event picture of diffraction emphasizing the statistical properties of gluon evolution, from which new quantitative predictions straightforwardly follow: We are able to determine the distribution of the total invariant mass produced diffractively, which is an interesting observable that can potentially be measured at a future electron-ion collider.

Primary author: MUNIER, Stéphane (CNRS and École polytechnique)

Track Classification: Diffraction in e-p and e-A collisions