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## Early Science Projections for Charged Pion Form Factor studies with ePIC at the Electron-Ion Collider

*Monday 9 June 2025 11:00 (15 minutes)*

The Electron-Ion Collider (EIC) is the first new collider to be constructed in the 21<sup>st</sup> century. When operational at Brookhaven National Laboratory in the early 2030's, it will allow hadron structure to be probed over a center of mass energy range of 20-140 GeV at very high luminosity ( $10^{33} - 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$ ). For  $e - p$  collisions, this will be the first collider where both beams will be highly polarized. In the first years of the EIC science program, the capabilities and the variety of beam species and energies will be expanded as systems are commissioned. Much thought is going into the science reach of these first years of operation. Projections will be presented for  $\pi^+$  form factor studies utilizing deep exclusive meson production in the first 7 years of the EIC science program. Such measurements may enable the direct observation of QCD's transition from confinement-dominated physics at large length-scales to perturbative physics at short-length scales.

### Keyword-1

Hadrons

### Keyword-2

QCD

### Keyword-3

EIC

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