

Abstract Submitted  
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**Pion and kaon structure functions at 12 GeV JLab and EIC<sup>1</sup>**

TANJA HORN, Catholic Univ of America — Pions and kaons are, along with protons and neutrons, the main building blocks of nuclear matter. They are connected to the Goldstone modes of dynamical chiral symmetry breaking, the mechanism thought to generate all hadron mass in the visible universe. The distribution of the fundamental constituents, the quarks and gluons, is expected to be different in pions, kaons, and nucleons. However, experimental data are sparse. As a result, there has been persistent doubt about the behavior of the pion's valence quark structure function at large Bjorken- $x$  and virtually nothing is known about the contribution of gluons. A 12 GeV JLab experiment using tagged DIS may contribute to the resolution of the former. The Electron-Ion Collider with an acceptance optimized for forward physics could provide access to structure functions over a larger kinematic region. This would allow for measurements testing if the origin of mass is encoded in the differences of gluons in pions, kaons, and nucleons, and measurements testing assumptions used in the extraction of structure functions and the pion and kaon form factors. Electroweak measurements at an EIC would also potentially allow to disentangle the role of quark flavors at high  $x$ . In this talk we will discuss the prospects of such measurements.

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