



Contribution ID: 60

Type: **Invited**

## Probing the Quark Orbital Angular Momentum at EIC and EicC

*Monday, 25 November 2024 12:00 (30 minutes)*

We propose to detect signals from quark orbital angular momentum (OAM) through exclusive  $\pi$  production in electron-(longitudinally-polarized) proton collisions. Our analysis demonstrates that the  $\sin 2\phi$  azimuthal angular correlation between the transverse momentum of the scattered electron and the recoil proton serves as a sensitive probe of quark OAM. Additionally, we present a numerical estimate of the asymmetry associated with this correlation for the kinematics accessible at EIC and EicC. This study aims to pave the way for the first experimental study of quark OAM in relation to the Jaffe-Manohar spin sum rule.

**Primary author:** Prof. ZHOU, Jian (Shandong University)

**Presenter:** Prof. ZHOU, Jian (Shandong University)

**Session Classification:** Plenary