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## **Charged current DIS on longitudinally polarised nucleons at an EIC**

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The proposed Electron-Ion Collider (EIC) aims to provide us with our clearest understanding yet of nucleon spin structure. Among its novel capabilities is the ability to study charged-current (CC) deep-inelastic scattering (DIS) on longitudinally polarised nucleons. This will provide invaluable and complimentary information to conventional, electromagnetic DIS, by probing a different set of quark flavour combinations, and giving access to high  $Q^2$ .

We present the results of a detailed study into the prospects of CC polarised DIS at an EIC. Using a new version of the DJANGO event generator, extended to handle polarised nucleons, we investigate the charged-current asymmetries, accounting for QED, QCD and electroweak radiative effects. Accounting for the expected EIC detector performance, we investigate the accuracy of the Jacquet-Blondel method in reconstructing the event kinematics from the hadronic final state. We find that the asymmetries are large and measurable with very high precision at an EIC. We then show the significant impact of such data when incorporated into an NLO global QCD analysis.

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