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Neutral-current SMEFT studies with EIC and LHeC DIS pseudo data

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We study the potential of DIS measurements at the Large Hadron-electron Collider (LHeC) and the Electron-Ion Collider (EIC) to probe physics beyond the Standard Model. Our study is performed in the context of the Standard Model Effective Field Theory (SMEFT). We find that future measurements at both machines can improve existing SMEFT fits to precision electroweak data by resolving blind spots in fits that utilize LEP and SLC data. We further show that the LHeC can probe semi-leptonic four-fermion operators to the 7 TeV level in some cases, improving upon the LHC reach.

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