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Strange quark polarized Parton Distribution functions using Semi-inclusive Deep-Inelastic Scattering at a Future Electron-ion collider JAY DESAI, ABHAY DESHPANDE, JINLONG ZHANG, Stony Brook University — We assess the impact of the future electron-ion collider in determination of the strange quark polarized parton distribution function, which is one of the missing pieces of the proton spin puzzle. We use a reweighting technique for the sets of the simulated data for 100 NNPDF polarized replicas with realistic uncertainties scaled to integrated luminosities of the EIC and for two different center-of-mass energies. We obtain the reduced uncertainty band of the strange quark polarized parton distribution functions from NNPDF. We analyze different theoretical models of the polarized parton distribution functions that can potentially be distinguished between at a future EIC using the reduced uncertainty band.

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