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Nucleon Spin Flavor Decomposition through Semi-Inclusive DIS Measurements on a Polarized 3He target XIAODONG JIANG, Los Alamos National Laboratory, ANDREW PUCKETT, Univ. of Connecticut, NILANGA LIYANAGE, Univ. of Virginia, JEFFERSON LAB HALL A COLLABORATION — Semi-Inclusive Deep-Inelastic Scattering reactions can provide quark flavor tagging through the detection of the leading-hadron. Precise measurements of double-spin asymmetry A_{1N}^h ($h = \pi^+, \pi^-, K^+, K^-$) can provide strong constrains on valence quark polarization, as well as sea quark polarization, and to access the possible polarized sea flavor asymmetry $\Delta\bar{u} - \Delta\bar{d}$. We emphasize that there are three independent methods to access polarized sea flavor asymmetry: 1. Next-Leading-Order QCD global fit method, as in DSSV2008, LSS2010 etc., 2. Leading-Order "purity method," as used by HERMES and COMPASS experiments, 3. Leading-Order "Christova-Leader" method in which helicity asymmetry of the yield difference $\pi^+ - \pi^-$ is used to extract valence quark polarization Δu_v and Δd_v, and polarized sea flavor asymmetry can be extracted when combining with inclusive spin structure g_{1p} and g_{1n}. Taking a JLab-12GeV SIDIS experiment (PR12-14-008) as an example we show the sensitivity to polarized parton distributions and the polarized sea's flavor asymmetry.

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