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A new method to extract the valence transversity distributions

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We propose a new method for the extraction of transversity distributions from Semi-Inclusive Deep Inelastic Scattering (SIDIS) data. The u -quark and d -quark transversity distributions are usually extracted from spin asymmetry data in the SIDIS processes, where it has to be coupled with a chiral odd-partner, typically the Collins or the di-hadron fragmentation function. Motivated by a recent suggestion on the extraction of transversity distribution with the concept of difference asymmetries and their ratios, which avoid the requirement of Collins function, we suggest a new measurement involving ratios of cross-sections, that would directly give the ratio $h_1^{d_v}/h_1^{u_v}$. We also present numerical estimates.

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