A direct extraction of the Sivers function from SIDIS data

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We present a point-by-point determination of the Sivers parton distribution function. The extraction is similar to the one already performed for the transversity distribution, namely it is based on the simultaneous use of proton and deuteron semi-inclusive deeply inelastic scattering data. Since the Sivers asymmetries involve the ordinary unpolarized fragmentation functions, SIDIS data are sufficient to extract the Sivers function, with no need of other measurements. The method has the advantage that it does not require a specific parametrization of the Sivers function: only simple assumptions are used to extract both the valence and the sea distributions. The results obtained using the published COMPASS data are presented and discussed. They are relevant also for the planning of future experiments.