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Reweighting the quark Sivers function with STAR jet data

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The Bayesian reweighting procedure is applied for the first time to a transverse momentum dependent distribution, the quark Sivers function extracted from Semi-Inclusive DIS (SIDIS) data. By exploting the recent published single spin asymmetry data for the inclusive jet production in $p^\uparrow p$ collisions from the STAR collaboration at RHIC, we show how such a procedure allows to incorporate the information contained in the new data set, without the need of re-fitting, and to explore a much wider x region compared to SIDIS measurements. The reweighting method is also extended to the case of asymmetric errors, and the results show a significant improvement of the knowledge of the quark Sivers function.

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