

Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Phenomenology of Transverse spin: Nucleon Tensor Charge determination¹ ALEXEI PROKUDIN, Jefferson Lab, 12000 Jefferson Avenue, Newport News, VA 23606, USA, ZHONG-BO KANG, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM 87545, USA, FENG YUAN, PENG SUN, Nuclear Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA — We will discuss the present status of the Phenomenology of Transverse spin. In particular we will illustrate the first extraction of the nucleon tensor charge from current experiments by a combined analysis of the Collins asymmetries in two hadron production in e^+e^- annihilations and single inclusive hadron production in deep inelastic scattering processes. The transverse momentum dependent evolution is taken into account, for the first time, in the global fit of the Collins fragmentation functions and the quark transversity distributions at the approximate next-to-leading logarithmic order. We obtain the nucleon tensor charge contribution from up and down quarks as: $\delta u = +0.30_{-0.11}^{+0.12}$ and $\delta d = -0.20_{-0.13}^{+0.35}$ at 90% of confidence level for momentum fraction $0.0065 \leq x_B \leq 0.35$ and $Q^2 = 10 \text{ GeV}^2$.

¹This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics, under contracts No. DE-AC02-05CH11231 (P.S., F.Y.), No. DE-AC52-06NA25396 (Z.K.), and No. DE-AC05-06OR23177 (A.P.).

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Date submitted: 09 Jan 2015

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