Abstract Submitted for the DNP12 Meeting of The American Physical Society

Pion Parton Distribution Function from DSE-QCD Moments¹ KONSTANTIN KHITRIN, JAVIER COBOS-MARTINEZ, Kent State University, CRAIG ROBERTS, Argonne National Laboratory, PETER TANDY, Kent State University — We obtain the valence quark PDF of the pion from a direct formulation of the moments within a Euclidean-formated modeling of QCD. There are no limitations on the number of moments that can be obtained. This approach employs the ladder-rainbow (LR) truncation of the Dyson-Schwinger equation (DSE) formulation of QCD and eliminates an obstacle that hinders a direct approach to the PDF. Bethe-Salpeter wavefunctions and dressed quark propagators from previous extensive DSE-LR work are recast in a form that allows exact Feynman integral techniques. Performance of this approach will be assessed through results for the reconstructed PDF, and considerations of the momentum sum rule.

¹Work supported by NSF Grant PHY-0903991 and DOE contract DE-AC02-06CH11357

Peter Tandy Kent State University

Date submitted: 02 Jul 2012 Electronic form version 1.4