Calculations of the Parton Structure of the Nucleon*[1] KYLE BED-NAR, Kent State Univ - Kent, IAN CLOET, Argonne National Laboratory, PETER TANDY, Kent State University — The quark parton structure of the nucleon is calculated in an approach based upon QCD's Dyson-Schwinger equations. The method accommodates a variety of QCDs dynamical outcomes including the running mass of quark propagators and the formation of non-pointlike diquark correlations. The integral elements, including the nucleon amplitude from a previous solution of the Poincaré covariant Faddeev equation, are those which have been successful in describing elastic nucleon form factors. The presented spin-independent PDFs are in good agreement with experiment. The relative importance of scalar and axial-vector diquark correlations will be explored. Preliminary results for spin-dependent PDFs and TMDs will be presented if available.

Peter Tandy
Kent State Univ - Kent

Date submitted: 12 Jan 2018   Electronic form version 1.4