

## Impact of Physical Scheme heavy-quark mass corrections on DIS PDF fits

*Thursday 5 May 2022 11:50 (20 minutes)*

We describe the phenomenological implications of a new heavy-quark mass scheme, called the Physical Scheme, that accounts for the effects of intrinsic heavy-quarks and provides a way to smoothly transition over the heavy-quark thresholds. We will present results for the DIS coefficient functions for  $F_2$  and  $F_L$  at NLO in the Physical Scheme showing that they reduce to the familiar (massless)  $\overline{\text{MS}}$  ones in the limit of large  $Q^2$ , where  $Q^2$  is the virtuality of the DIS probe. We end by showing some preliminary results on the effect of extracting parton distribution functions in the Physical Scheme using the HERA structure function data that spans a wide range of momentum fractions  $x$  and scales  $Q^2$ .

### Submitted on behalf of a Collaboration?

No

**Authors:** MARTIN, Alan; FLETT, Chris; RYSKIN, Mikhail (Petersburg Nuclear Physics Institute); BERTONE, Valerio (C.E.A. Paris-Saclay)

**Presenter:** FLETT, Chris

**Session Classification:** WG1: Structure Functions and Parton Densities

**Track Classification:** WG1: Structure Functions and Parton Densities