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## Determination of unintegrated gluon densities with $F_2^{c\bar{c}}$ at HERA

Since the cross section of the production of heavy quarks at the electron proton collider HERA is dominated by gluons, the determination of gluon densities is an essential contribution to research in this field. Methods will be presented to fit unintegrated, i. e. transverse momentum dependent gluon densities to inclusive cross sections.

The main focus will be the structure function  $F_2^{c\bar{c}}$ , which describes the charm quark content of the proton. It is therefore a suitable measurement for the determination of unintegrated gluon densities. The results of fits to  $F_2^{c\bar{c}}$  will be presented, as well as a study on the experimental uncertainties of the resulting gluon densities.