

### **An Inquiry into the Nature and Distribution of Proton Partons**

Due to its high rapidity coverage in forward direction and low momentum trigger thresholds the LHCb detector can probe  $q\bar{q} \rightarrow \gamma^*/Z \rightarrow \mu\mu$  events in a unique kinematic region. The LHCb detector has the potential to constrain the proton parton distribution functions (PDFs) down to Bjorken-x values of  $10^{-6}$ . This talk will report on the sensitivity of the experiment and on first results with the data taken in 2010.