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Probing the valence quark region of nucleons with Z bosons at LHCb

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The unique forward coverage of the LHCb spectrometer allows the valence quark distributions of protons and nuclei to be probed with unprecedented precision. In this high-x region, both the flavor content and structure of the nucleon's parton distribution functions remain relatively poorly known. New LHCb measurements of Z+charm jet production could be indicative of a valence-like intrinsic-charm component in the proton wavefunction, and measurements of Z production in pPb collisions provide new constraints on the partonic structure of nucleons bound inside nuclei. Here we will discuss these new LHCb measurements and comparisons with state-of-the-art parton distribution function calculations.

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