

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Probing for Intrinsic Charm at LHCb DANIEL CRAIK, Massachusetts Institute of Technology MIT, LHCb COLLABORATION — There is considerable interest in the possibility that the proton wave function may contain some intrinsic charm (IC). In particular, the presence of IC in the proton may affect a range of processes: from cross sections relevant to Higgs production and dark-matter detection at the LHC to the rate and kinematics of charm hadrons produced by cosmic rays interacting with the Earth's upper atmosphere (an important background to astrophysical neutrinos). The IC of the proton may be probed at the LHC by studying the production of Z bosons in association with a charm jet in the forward region, which may proceed via $gc \rightarrow Zc$ interactions. We present results from a study of this process based on data collected during Run 2 of the LHCb experiment.

Daniel Craik
Massachusetts Institute of Technology MIT

Date submitted: 06 Jan 2021

Electronic form version 1.4