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V+heavy flavor jets and constraints to PDFs with CMS

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The associated production of vector bosons, W or Z, and jets originating from heavy-flavour quarks is a large background source in measurements of several standard model processes, Higgs boson studies, and many searches for physics beyond the SM. The study of events with one or two well-identified and isolated leptons accompanied by heavy-flavour jets is crucial to refine the theoretical calculations in perturbative QCD, as well as to validate associated Monte Carlo techniques. Using the LHC proton-proton collision data at centre-of-mass energies of 8 and 13 TeV collected by the CMS detector, Wbb, Zb(b), W+c, and Z+c cross sections are measured. Fiducial differential cross sections are measured as a function of several kinematic observables. The study of the associated production of a vector boson with jets from a c-quark is specially interesting to improve the treatment of heavy quarks in PDF-related studies. The production of a W boson associated with a c-quark allows probing and constraining the strange quark content of the proton. T he associated production of a Z boson and c-quark jets may give insight into the existence of an intrinsic charm quark component inside the proton.

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