1. Record Nr. UNINA9910427691503321

Autore	Pflitsch Svenja Karen
Titolo	Associated Production of W + Charm in 13 TeV Proton-Proton Collisions Measured with CMS and Determination of the Strange Quark Content of the Proton / / by Svenja Karen Pflitsch
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-52762-X
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XIII, 148 p. 218 illus., 79 illus. in color.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	539.72167
Soggetti	Particles (Nuclear physics) Quantum field theory Nuclear physics Elementary Particles, Quantum Field Theory Particle and Nuclear Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction -- Theoretical Overview -- The LHC and the CMS Experiment -- Event Reconstruction -- Measurement of the Associated Production of W+charm in s = 13 TeV Proton-Proton Collisions -- Determination of the Strange Quark Content of the Proton -- Summary and Conclusions.
Sommario/riassunto	The associated production of a W boson and a single charm quark (W+c) is the only process in proton-proton collisions that directly probes the strange quark content of the proton. In this thesis, W+charm production is measured in proton-proton collisions at the LHC at 13 TeV, as recorded by the Compact Muon Solenoid (CMS) experiment. The analysis focuses on the identification of W bosons in their leptonic decay to a muon and a neutrino and charm quarks are tagged via the full reconstruction of D*-Mesons. The measured cross sections of W+c production are used, in combination with other relevant CMS results and the most precise HERA DIS data, in a QCD analysis to determine the strange quark content of the proton. The resulting strange quark distribution and suppression, with respect to

the other light sea quarks, are in good agreement with those obtained in neutrino scattering experiments and extend their kinematic reach.