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D* Meson Production in Muon Nucleon Interactions at 160 GeV/c

D* meson production has been measured in inelastic scattering of 160 GeV/c muons from a ${}^6\text{LiD}$ target with the COMPASS spectrometer at CERN for photon virtualities Q^2 in the range 0.003 to 10 GeV², Bjorken- x from 0.00003 to 0.1 and virtual photon energy from 20 to 140 GeV.

The investigation is based on 8100 events where a D0 or Anti-D0 was detected subsequently to a D+ or D- decay. The semi-inclusive differential D+ and D- production cross sections as a function of D meson energy, transverse momentum, energy fraction z and virtual photon energy and the total visible production cross section are compared with theoretical predictions for the process which is assumed to be due to photon-gluon fusion into open charm.

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