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## Exclusive $\rho(770)$ photoproduction at HERA

*Wednesday, April 10, 2019 8:50 AM (20 minutes)*

Exclusive photoproduction of  $\rho(770)$  vector mesons is studied using the H1 detector at HERA. A sample of about 700000 decays  $\rho \rightarrow \pi^+\pi^-$  was collected in the years 2006-2007, using the H1 fast track trigger. It corresponds to an integrated luminosity of  $1.3 \text{ pb}^{-1}$ . The sample is used to study cross-sections as a function of the invariant mass  $m_{\pi\pi}$  of the decay pions, the photon-proton collision energy  $W$  and the momentum transfer at the proton vertex  $t$ . The phase-space restrictions are  $0.5 < m_{\pi\pi} < 1.3 \text{ GeV}$ ,  $20 < W < 80 \text{ GeV}$  and  $|t| < 1.5 \text{ GeV}^2$ . Reactions where the proton stays intact are statistically separated from those where the proton dissociates to a low-mass hadronic system. The observed cross-section dependencies are parameterized using fits and are compared to expectations from phenomenological models.

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