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Exclusive ω meson production at COMPASS

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Collaboration

COMPASS

Abstract content

The COMPASS collaboration has measured exclusively produced ω mesons in muon proton scattering using a transversely polarised NH_3 target. Five single-spin and three double-spin azimuthal asymmetries in the cross section were determined in the kinematic region 1 to 10 $(\mathrm{GeV/c})^2$ of photon virtuality, 0.003 to 0.3 of Bjorken-x and 0.05 to 0.5 GeV/c of ω squared transverse momentum. The asymmetries are sensitive to nucleon-helicity flip GPDs E^f that are related to orbital angular momentum of flavour f quarks, to chiral-odd GPDs H_T^f that are related to transversity PDFs, and also to the sign of the $\pi\omega$ transition form factor. The results are compared to recent calculations of a GPD-based model.

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