Vector Meson Production at 3.67 GeV/c

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Vector meson production by a proton beam of 3.67 GeV/c hitting a liquid hydrogen target has been studied at Saturne with the DISTO spectrometer[1]. Results on total cross-sections and angular distributions of the differential cross-sections for ω and ϕ production have already been published[2,3,4]. New results on total and differential cross-sections for the reaction $pp \to pp\rho^0$ are now available and will be presented at this conference. The exclusive ρ^0 meson production was measured via its dominant $\pi^+\pi^-$ channel over the full angular domain. The total cross-section obtained is significantly lower than that used in model calculations for heavy ions collisions. The angular distribution of the differential cross-section indicates a strong anysotropy in the ρ^0 meson production. This distribution is compared with that for the ω meson production[4] in order to extract the relative strengths of nucleonic and mesonic currents responsible in meson exchange models for vector meson production near threshold.

References

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