Contribution ID: **197**   Type: **poster**

Application of Maximum Likelihood Method for the computation of Spin Density Matrix Elements of Vector Meson Production at HERMES.

Monday, 13 February 2006 11:00 (20 minutes)

HERMES experiment at DESY has performed extensive measurements on diffractive production of light vector mesons (rhoˆ0, omega, phi) in the intermediate energy region. Spin density matrix elements (SDMEs) were determined for exclusive diffractive rhoˆ0 and phi mesons and compared with results of high energy experiments. Several methods for the extraction of SDMEs have been applied on the same data sample. A comparision between those methods is given. Maximum Likelihood method was chosen for the final computation of two sets of 23 SDMEs on hydrogen and deuterium HERMES data. These results yield more insight in the vector meson production mechanisms at HERMES kinematics and in the helicity transfer in diffractive vector meson production, which allows to see new results on the s-channel helicity violation and an indication on the contribution of unnatural parity exchange amplitudes.

Summary

A comparision between several methods for the extraction of spin density matrix elements of diffractive rhoˆ0 production is given. Maximum Likelihood method was chosen for the final computation of two sets of 23 SDMEs on hydrogen and deuterium HERMES data. It allows to see new results on the s-channel helicity violation and an indication on the contribution of unnatural parity exchange amplitudes.

Primary author: Dr BORISSOV, Alexander (University of Glasgow, Scotland, UK)

Presenter: Dr BORISSOV, Alexander (University of Glasgow, Scotland, UK)

Session Classification: Poster

Track Classification: Event processing applications