MEASUREMENTS OF THE TENSOR ANALYZING POWER COMPONENT T_{20} OF COHERENT PHOTOPRODUCTION OF NEUTRAL PION ON TENSOR-POLARIZED DEUTERON AT THE VEPP-3 STORAGE RING

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The experiment on measurements of the tensor analyzing power T_{20} of coherent photoproduction of neutral pion on a tensor polarized deuterium target ($\gamma \rightarrow d'\pi^0$) is described. Measurements covered two kinematic ranges: the photon energy range E_γ = 200 – 500 MeV and neutral pions emission angle in range = 100° – 140°, E_γ = 200 – 500 MeV and = 60° – 65°.

In the experiment we use cryogenic deuterium polarized atomic beam source, manufactured in BINP, which allows to get the thickness of the polarized target $5*10^{13}$ at/cm^2.

The detectors register deuterons and 1 or 2 photons from π^0 decay in coincidence. Neutral pion detector arm consists of electromagnetic NaI/CsI calorimeter, covering Θ = 50° – 150° and detect 1 or 2 photons from π^0 decay. Two deuteron detector arms consists of the wire chamber and plastic scintillators, covering Θ = 20° – 30° and Θ = 60° – 70°.

The measurements of the degree of target polarization and of the experiment luminosity were done by detecting the elastic electron-deuteron scattering at low momentum transfer.

Preliminary results on the measurements of the tensor analyzing power component are presented and are compared with several theoretical predictions.

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