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Analyzing power of Inverse Diproton Photodisintegration at Intermediate Energies

Photoabsorption on two-nucleon systems $\gamma\{NN\}\rightarrow NN$, and the inverse reaction, hard bremsstrahlung $NN\rightarrow\{NN\}\gamma$, are widely used to test different theoretical ideas of the nucleon-nucleon interaction. The reaction $pp\rightarrow\{pp\}\gamma$, where diproton $\{pp\}$ is a proton pair in $1S_0$ state, has been observed with the ANKE spectrometer at COSY-Jülich. It is kinematically very similar to well-studied reaction $pn\rightarrow d\gamma$, however dynamically they significantly differ from each other due to the different quantum numbers of diproton and deuteron. As a result multipole contributions will also be significantly different. In this talk we will present the progress on obtaining the analyzing power A_y of the $pp\rightarrow\{pp\}\gamma$ reaction at forward angles at several energies in the region of $\Delta(1232)$ isobar excitation: 500, 550 and 700 MeV. Together with its differential cross section measured earlier, this will help to better estimate the multipole contributions to this reaction.

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