

The ABC effect in $d+p \rightarrow {}^3\text{He} + \pi^+ + \pi^-$ at ANKE*

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Double pionic fusion of protons and deuterons is known to be correlated with a large enhancement at low values of the two pion invariant mass distribution. The origin of this long known phenomenon, called ABC effect, is not yet completely understood and hence a subject of current research. A dp scattering experiment, conducted at the magnetic spectrometer ANKE to investigate the ${}^3\text{He}\eta$ final state interaction offered excellent conditions to additionally study the ABC effect in the reaction $d+p \rightarrow {}^3\text{He} + \pi^+ + \pi^-$.

The data discussed in this talk were obtained at a fixed beam momentum of 3.224 GeV/c which corresponds to an excess energy of 270 MeV for the observed reaction. The coincident detection of ${}^3\text{He}$ nuclei in the forward detector and π^- mesons in the negative detector of the ANKE experimental setup allows for a complete reconstruction of events resulting from the reaction channel of interest using the missing mass technique.

The good momentum resolution of the ANKE spectrometer allows for detailed investigations on the invariant mass spectra of the $\pi\pi$ as well of the ${}^3\text{He}\pi$ subsystems with respect to possible production processes, i.e. via $\Delta\Delta$ or N^* excitation. Recent results will be presented and discussed.