

Search for η' mesic nuclei by missing-mass spectroscopy of $^{12}\text{C}(p, d)$ reaction

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Collaboration

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Abstract content

We measured excitation spectra in the $^{12}\text{C}(p, d)$ reaction around the η' emission threshold to search for η' meson bound states in carbon nuclei (η' mesic nuclei). A 2.5 GeV proton beam from the SIS synchrotron impinged on a carbon target to potentially produce η' mesic nuclei via the $^{12}\text{C}(p, d)$ reaction. The ejected deuterons were momentum-analyzed by FRS used as a high-resolution spectrometer. An extremely good statistical sensitivity was achieved in the measured excitation spectra as well as a sufficiently good energy resolution. In this contribution, the analysis on the excitation spectra and the preliminary results are presented.

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