



独立行政法人理化学研究所 仁科加速器研究センター
第157回 RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science
The 157th RIBF Nuclear Physics Seminar

New Θ^+ result from LEPS

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New results of the penta-quark Θ^+ study in the gamma $d \rightarrow K^+ K^- p n$ reactions from LEPS will be presented. Firstly, in order to check the validity of the 5-sigma evidence that we obtained by analyzing the data taken in 2002-2003, the same analysis method was applied to the new data taken in 2006-2007. A strong narrow peak in the Fermi-motion corrected K^- -missing mass was not reproduced in the new data set.

Then, we applied an exclusive analysis to the both data sets, where background processes due to gamma p reactions were identified by energy loss information in a plastic counter, which was placed just after the liquid-deuterium target. A clear signal enhancement was seen in the gamma n contributions, and a part of the inconsistency was tuned out to be due to fluctuations in the proton contribution of the previous data set. The signal enhancement was also confirmed by a Monte-Carlo based exclusive analysis.

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