

## A study of the in-flight ${}^3\text{He}(\text{K}^-, \Lambda \text{p})\text{n}$ reaction and the “K-pp” bound state

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A theoretical investigation is done to clarify the origin of the peak structure observed near the K-pp threshold in the in-flight  ${}^3\text{He}(\text{K}^-, \Lambda \text{p})\text{n}$  reaction of the J-PARC E15 experiment, which could be a signal of the lightest kaonic nuclei, that is, the  $\text{KbarNN}$  ( $I=1/2$ ) state. We employ modern  $\text{KbarN}$  interactions within a Faddeev-based approach and find that the experimental signal is qualitatively well reproduced by the assumption that, after the emission of the energetic neutron, a  $\text{KbarNN}$  bound state is formed, decaying eventually into a  $\Lambda \text{p}$  pair. We discard a possible interpretation in terms of the formation of an uncorrelated  $\Lambda(1405) \text{p}$  state.

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