

# Observation of the $K^-pp$ bound state in J-PARC E15

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The existence of an exotic nuclear bound state containing an anti-kaon and nucleons (kaonic nucleus) has been believed for a long time since the strong attractive  $\bar{K}N$  interaction was confirmed. The simplest kaonic nucleus,  $K^-pp$  bound state, is particularly important to establish the existence of the kaonic nucleus, and has been searched for by many experiments. We performed an experiment to measure the  $K^-pp$  using in-flight  $K^-$  reaction at J-PARC hadron experimental facility, and finally observed a clear signal of  $K^-pp$ . The details of the experiment and analysis will be shown in this talk.

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