

Abstract Submitted
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Search for kaonic nuclear state using p+p reaction KEN SUZUKI, Stefan-Meyer-Institut, Austrian Academy of Sciences, FOPI COLLABORATION — Since so-called “kaonic hydrogen puzzle” has been solved about 10 years ago with a modern X-ray measurement of kaonic hydrogen, and KN interaction has been reasonably well constrained from the experimental data, a possible existence of exotic nuclear systems involving K as a constituent has been a hot topic for theory and experiment. Such systems are said to have peculiar features compared to conventional nuclear systems, namely high binding energy (> 50 MeV), bound states like K^-pp , K^-ppp due to strong $I = 0$ KN interaction, density that does not saturate at normal nuclear density. We plan an experimental program to aim at the first high statistics, low background measurement in order to examine unambiguously the existence of the prototype kaonic nuclear state, K^-pp using $p + p \rightarrow K^+ + K^-pp$ reaction at $T_p = 3$ GeV. The experiment employs the FOPI apparatus at GSI (Germany) and beamtime is scheduled in August 2009. In the talk, an impression of quick analysis will be reported as well.

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