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Recent progress on Strangeness Nuclear Physics at J-PARC

Monday 3 June 2019 10:45 (30 minutes)

The K^- beam intensity at the hadron experimental hall in J-PARC is steadily increasing for conducting strangeness nuclear physics program. The present production target in the hadron hall can accept up to ~50 kW proton beam from the 30-GeV main ring. In the summer of 2019, a new production target which can operate more than 80 kW is going to be installed, and the beam intensity will be increased more than 1 M/spill.

In this talk, recent topics obtained in the following several experiments at J-PARC will be presented:
1) Hypernuclear gamma-ray spectroscopy in ${}^{4}_{\Lambda}$He and ^{19}F (E13),
2) Hybrid emulsion experiment to look for double-Λ hypernuclei (E07),
3) Search for Ξ-hypernucleus in the 12C(K^-, K^+) reaction (E05), and
4) Search for K-pp bound state in ^{3}He(K^-, Λp)n reaction (E15).
Further, future prospect of the strangeness nuclear physics program will be mentioned.

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