Contribution ID: **105** Type: **talk**

Hypernuclear gamma-ray spectroscopy: summary and future prospect

Thursday, 30 June 2022 10:00 (20 minutes)

s-shell to sd-shell hypernuclear gamma-ray spectroscopies were carried out at KEK-PS, BNL-AGS and J-PARC using germanium detector arrays as the series of Hyperball project. These precise measurements of hypernuclear level structures gave various information on the ΛN interaction. In particular, the result from the gamma-ray spectroscopy of ${}^{4}_{\Lambda}$He ($1^+ \rightarrow 0^+$) M1 transition (J-PARC E13) confirmed the existence of the charge symmetry breaking in ΛN interaction and its spin dependence. In this talk, a recent summary of the hypernuclear gamma-ray spectroscopy will be presented.In addition, prospects at future J-PARC Experimental Facility will be introduced.

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Session Classification: 4; Thu-I