

RCNP

NUCLEAR PHYSICS

THEORY SEMINAR

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| Title | In-medium effect for hadrons and symmetries — η and $\eta'(958)$ mesic nuclei formation — |
| Speaker | Hideko Nagahiro (RCNP/Nara WU) |
| Date/Time | Thursday, May 18, 2017, at 13:30 |
| Place | Lecture room 1, 6th floor, RCNP |

Abstract:

The aim of our studies is to understand the nontrivial mass spectrum of hadrons and their interactions by using symmetries of QCD as a clue. In this talk, we would like to introduce our studies concerning the η and $\eta'(958)$ mesic nuclei. The latter, in particular, is a main topic of the present talk.

We would like to discuss about the feature of the $\eta'(958)$ meson [1], for example, an expected behavior of the meson in finite density, formation spectra of mesic nuclei system, and the experimental feasibility. We also discuss the points and issues which are necessary to understand the experimental results obtained at GSI [2]. In addition, a recent study of photoproduction of η' off nucleon studied by Shuntaro Sakai (IFIC) [2] and that of η' -N interaction considering coupled channels by Aayano Kawamoto (NaraWU) [4] will be introduced.

References

- [1] H. N., S. Hirenzaki, Phys. Rev. Lett. **94** (2005) 232503, etc.
- [2] Y. K. Tanaka *et al.*, (η -PRiME/Super-FRS Collaboration), Phys. Rev. Lett. **117** (2016), 202501.
- [3] S. Sakai, A. Hosaka, H.N., Phys. Rev. **C95** (2017) 045206.
- [4] A. Kawamoto, H.N., in preparation.

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