

## Few-body approach for structure of light kaonic nuclei

*Tuesday, 26 July 2016 16:50 (30 minutes)*

The structure of the light antikaon-nuclear quasi-bound states is investigated with correlated Gaussian method. We perform full three- to seven-body calculations for the systems which consist of an antikaon (anti-K) and a few nucleons (N) such as anti-KNN, anti-KNNN, anti-KNNNN and anti-KNNNNNN systems without any many-body approximation and investigate how the nuclear structure is changed by injected anti-kaon. Two types of the anti-KN interaction models are considered: and energy-dependent interaction based on chiral SU(3) effective field theory, and an energy-independent phenomenological interaction. These two models have different pole structure of the Lambda(1405) that implies different property in the light kaonic nuclei. We investigate how the difference of the interaction appears in the structure of the light kaonic nuclei. As a remarkable result of this investigation, it is found that the anti-KNNNNNN ground state has the different spin corresponding to the difference between these two models

**Presenter:** OHNISHI, Shota (Hokkaido University)

**Session Classification:** Few body Systems