Superdeformed states in hypernuclei with antisymmetrized molecular dynamics MASAHIRO ISAKA, RIKEN Nishina Center, MASAAKI KIMURA, Hokkaido University, EMIKO HIYAMA, RIKEN Nishina Center, HIROYUKI SAGAWA, University of Aizu/RIKEN Nishina Center — One of the main purposes of hypernuclear physics is to reveal the responses to the addition of a Λ particle in (hyper)nuclei. Recently, as an example of such responses, several authors investigated the difference of B_Λ between the spherical (ground) and largely deformed (superdeformed) states. For example, the relativistic mean-field (RMF) calculations predicted the large B_Λ in the superdeformed states in several Λ hypernuclei such as $^{37}_{\Lambda}$Ar and $^{39}_{\Lambda}$Ar [1]. On the other hand, in $^{41}_{\Lambda}$Ca and $^{46}_{\Lambda}$Sc, it was discussed that B_Λ in the spherical states is larger than that in the superdeformed states based on the antisymmetrized molecular dynamics (AMD) [2]. In the present study, we have applied the AMD to Ar Λ hypernuclei to reveal the difference of B_Λ between the spherical and superdeformed states. Especially, we will focus on $^{39}_{\Lambda}$Ar as well as $^{37}_{\Lambda}$Ar, because it would be possible to produce $^{39}_{\Lambda}$Ar by the JLab experiments. In this talk, we will show the difference of B_Λ in Ar hypernuclei and compare it with the previous AMD results and RMF predictions. Furthermore, we will predict the changes of the excitation spectra in $^{39}_{\Lambda}$Ar due to the difference of B_Λ.

[1] B.-N. Lu, *et al.*, Phys. Rev. C**89**, 044307(2014).
[2] M. Isaka, *et al.*, Phys. Rev. C**89**, 024310(2014).

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