

Study of the Kbar-nucleus interaction by using the $^{12}\text{C}(\text{K}^-, \text{p})$ reaction at J-PARC

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An interaction between Kbar and nucleus is studied by using the X-ray from the kaonic atoms for a long time. However, it is difficult to determine the Kbar-nucleus interaction by using only kaonic-atoms data because the value of shift and width of the X-ray depend not only the potential depth but also the type of theoretical model. Thus, we study the Kbar-nucleus interaction by comparing an observed missing-mass spectrum of the $^{12}\text{C}(\text{K}^-, \text{p})$ reaction with the DWIA calculation. Such a study has already reported from KEK-E548 experiment. However, their spectrum was not inclusive one but semi-inclusive one, which was required at least one charged particle hit by their decay counter. Therefore, it is point out that this requirement can distort the inclusive spectrum. In our experiment, we have evaluated the real inclusive missing-mass spectrum by measuring only the K- and proton's momenta. We took this data in November 2015 as a by-product of J-PARC E05 experiment, which was a Xi-hypernuclei search experiment by using $^{12}\text{C}(\text{K}^-, \text{K}^+)$ reaction. In this talk, we will report the preliminary analysis result of this measurement.

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