

Photodisintegration measurement using MAIKo

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The photodisintegration of 4He have been extensively studied both from the experimental and theoretical aspects. The photodisintegration is mainly caused by an electric-dipole transition to the giant dipole resonance and the subsequent decay. This process is deeply related to the nucleosynthesis in the universe, therefore, it is very important from a view of astrophysics as well as nuclear physics. However, the experimental situation for this reaction is not satisfactory. Although much effort was devoted to measure the cross section for the photodisintegration reaction in 4He over the last four decades, the experimental data contradict each other, and new reliable experimental data are desired.

The active target is quite suitable to the photodisintegration measurement because it covers a large solid angle for charged particles emitted from the photonuclear reaction. Moreover, there is no limitation from the beam counting rate, which is the destined difficulty for the active target, because the active target is almost insensitive to gamma rays.

Recently, the active target MAIKo, which is jointly developed by Kyoto and RCNP, was successfully employed to measure the photodisintegration cross section for 4He . In the present talk, the details of the experimental setup and results will be reported.

Primary author: Prof. KAWABATA, Takahiro (Department of Physics, Kyoto University)

Co-authors: Mr FURUNO, Tatsuya (Department of Physics, Kyoto University); MURATA, motoki (Department of physics kyoto university)

Presenter: MURATA, motoki (Department of physics kyoto university)

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