

Measurement of double differential cross sections of charged particles produced by 100 MeV/u ^{12}C beam nuclear reactions/ $^{100}\text{MeV/u } ^{12}\text{C}$ ビーム入射荷電粒子生成二重微分断面積の測定

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Nuclear data on carbon ion induced reactions in a wide range of energy are needed for purposes such as improvement radiation protection for space exploration and evaluation systems for secondary exposure on radiation therapy. However, it is reported that there is no measurement data on double differential cross sections of incident high energy ^{12}C particles between 100 MeV/u and 500 MeV/u. Therefore, there is a need to obtain measurement data of double differential cross sections in high energy regions.

In this study, we measured double differential cross sections of charged particles produced by 100 MeV/u carbon ions on ^{12}C , ^{27}Al and ^{59}Co targets. Obtained data are compared with data previously measured by other researchers and a moving source model. Overall good agreements are shown.

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