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Development of the platform to calculate the cross section induced by the proton beam

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The cross section of a nucleus is defined as the probability that a nuclear reaction will occur and the cross section measurements of the nuclear reaction interested are very important stage to understand the production yield of the radioactive isotopes. In general, the targets induced by the proton beam are measured using the HPGe in order to measure the amount of the radioactivity of the target material produced. However, the procedure to calculate the cross section from the measurement data collected using HPGe is the time-consuming task to involve analyzing results using a lot of raw measurement data. If this procedure has been performed by the platform consisting of the data analysis programs such as the ROOT data analysis language, the working time and mistakes to occur during this work process can have been reduced. These measurement data can also have been analyzed using the data-fitting method included in the platform. In this research, the algorithm to calculate the cross section from the raw measurement data and the procedure to analysis the data using the data-fitting method would be described.

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