

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Performance evaluation of multi sampling ionization chamber for heavy ion beams by comparison with GEANT4 simulation YUKI KANKE, Department of Physics, Tokyo University of Science, HIMAC H093 COLLABORATION — In high-energy heavy-ion accelerator facilities, multi sampling ionization chambers are often used for the identification of the atomic number Z by detecting the energy deposit in it [1,2]. In the study at GSI, the picture of the escape of secondary electrons, δ rays, from the ionization chamber explains the experimental data of pulse-height resolution [3]. If this picture is correct, the pulse-height resolution should depend on the effective area of the ionization chamber. The experiment have been performed at NIRS-HIMAC. The pulse-height resolutions of two ionization chambers with different effective area were compared by using a 400-MeV/u Ni beam and their fragments. The difference in the pulse-height resolutions was observed. By comparison with the GEANT4 simulation including the δ -rays emission, the performance of the ionization chamber have been evaluated.

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Date submitted: 01 Jul 2014

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