

# RAON Beam Simulation Using Geant4

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Geant4 was created for precise simulation of high-energy physics experiments to explore the origin of the universe. It provides various physical models of electromagnetic interactions between particles and matter compared to statistical processing of other simulations. In addition, it is widely used not only in the field of high-energy physics but also in various fields such as cosmic radiation research, astrophysics, and medical physics due to its many types of roles and flexibility. Let me present the current status and future plan of Geant4 applications for RAON beam. A study on Geant4 using beam simulation for RAON is introduced. In the fixed target experiment, secondary particles have been relatively little concentrated. Therefore, it needs to be studied. The simulation results between hydrogen fixed target and various heavy ion beam were compared with experimental data. To determine the optimized model which best describes the expected physical phenomena, we study various Geant4 physics models. Using the optimized model, we study physical properties of the primary proton beam and secondary heavy ion beam at the fixed target experiment. These results will help RAON experiment to get secondary particles.

## Paper submission Plan

Yes

## Best Presentation

## Contribution track

ICABU WG4. Applications of Particle Beams

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