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Simulation study of performance of active target GEM-TPC RYOHJI AKIMOTO, Center for Nuclear Study — For studying nuclear properties using scatterings and charge-exchange reactions with light nuclei as incident beams, it is crucial to measure the cross sections at forward angles. In case of studing unstable nuclei, inverse kinematics is often used, but it is very difficult to measure precisely enough the forwardly emitted projectile nuclei, in particular, at medium to high energies. Alternative way is to measure the recoiled light target nuclei, and gaseous active target should be a solution which enable us to measure recoil light nuclei down to very low energy with enough resolution. Conceptual design and current status of an active target TPC with GEM for the RIKEN RIBF experiments will be presented. By using GEM, TPC can be operated at high injection rate. In the case of high intensity and medium heavy nuclear beam with intermediate energy, a large number of ion create at beam area. To lessen the effect of them, GEM don't cover the beam area. Furthermore, we evaluate the effect of the ion created when the beam passes. We set the goal of spec to 1 degree of angler resolution by FWHM for the particle flying 100mm. The result of simulation study will be shown at my talk.

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