

Abstract Submitted  
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**CNS Active Target for deuteron induced reactions with high intensity beams** SHINSUKE OTA, CNS, the University of Tokyo, CAT COLLABORATION — A gaseous active target based on GEM-TPC, named CAT, is being developed for the forward angle measurement of deuteron induced reactions in inverse kinematics, such as deuteron inelastic scattering (d,d') and charge exchange reaction (d,2p), especially with exotic beam. To perform missing mass spectroscopy in inverse kinematics, one needs to measure the momentum vector of very low energy recoiled particle (deuteron in our case). The CAT is operated with 0.4-atm deuterium gas and the low energy threshold for detection is about 0.5 MeV. Recently, the amplification part is modified to perform high luminosity measurement with  $10^6$ -Hz beam. The property of GEM in deuterium gas was studied and  $10^4$  gain was achieved with three GEMs. The track of recoiled particle is deduced using charge division method with triangular shape readout pads. The measured position resolution was  $300 \mu\text{m}$ . The pilot experiments with  $^{14}\text{O}$  and  $10^6$ -Hz  $^{132}\text{Xe}$  beam were performed at HIMAC with high intensity beam. The recoiled deuteron was successfully measured. In this talk, the results of pilot experiments and farther development for intense beam injection will be reported.

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