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Coherent Pion Production Measurement from the reaction ^{12}C(p,nπ^+)^{12}C KUNIHIRO FUJITA, YASUHIRO SAKEMI, KICHIJI HATANAKA, ATSUSI TAMII, YOUHEI SHIMIZU, YUJI TAMESHIGE, HIROAKI MATSUBARA, RCNP, Osaka Univ., MASAHARU NOMACHI, HIDEHITO NAKAMURA, Osaka Univ., TETSUO NORO, TOMOTSUGU WAKASA, HIDETOMO YOSHIDA, TAKASHI ISHIDA, SHUN ASAJI, YUJI NAGASUE, Kyusyu Univ. — The physics goal of our experiment is to measure the Coherent Pion Production (CPP) such as ^{12}C(p,nπ^+)^{12}C(Ground State) and investigate the short range component of the nuclear interaction, which is sensitive to the critical density of pion condensation phase. We performed the test experiment in December, 2004 and May, 2005. Trigger counter for the pion is developed and procedure of coincidence with neutron was established. To identify the CPP event under enormous background, we need tracking detector with high position resolution and radiation tolerance. It can be achieved by Gas Electron Multiplier (GEM) Detector. Then, we developed the GEM detector and its readout electronics called Space Wire readout system for the charged pion measurement. The prototype of the detector is fabricated and basic detector specification is measured. We plan to measure the CPP cross section with full setup including GEM and neutron counter to get quantitative information about the short range component.

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