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Development of GEM detectors for a large acceptance phi meson spectrometer YOSUKE WATANABE, Univ. of Tokyo, KAZUYA AOKI, HIDETO ENYO, Riken, TAKU GUNJI, HIDEKI HAMAGAKI, YASUTO HORI, CNS, YUSUKE KOMATSU, SHINICHI MASUMOTO, KYOICHIRO OZAWA, TAMOTSU SATO, Univ. of Tokyo, MICHIKO SEKIMOTO, KEK, TOMOYA TSUJI, CNS, KAZUKI UTSUNOMIYA, Univ. of Tokyo, SATOSHI YOKKAICHI, Riken — New experiment is being proposed at J-PARC to study chiral properties and meson mass modification in nucleus. Mass modification of ϕ meson in nucleus can be considered as a signal of partial chiral symmetry restoration. Experimentally, the first observation of ϕ mass modification is reported by KEK-E325. However, several possibilities for the origin of the mass modification exist. Thus, the next generation experiments are highly required to distinguish several physics processes. For such purpose, large acceptance spectrometer and high intensity beam line are needed. We are developing a new spectrometer using GEM detectors to cover a large acceptance and cope with high counting rates. A prototype is reconstructed and tested using electron beam. Test experiments are performed at FUJI test beam line at KEK and at LNS GeV-Gamma beam line at Tohoku University. Detailed evaluation of position resolutions at several conditions is performed. Currently, a position resolution of 100 μm is achieved. We will report details of the proto type and results of beam tests.

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