Title:
Performance Evaluation of the Detectors for the DeeMe Experiment

Abstract:
The DeeMe experiment aims to search for $¥mu$-e conversion in the nuclear field with a single event sensitivity of 10^{-14}, which is one order of magnitude better than those of previous experiments. We prepare the experiment at the Materials and Life Science Experimental Facility in J-PARC.

In the experiment, before signal electrons come, approximately $70¥ ¥mathrm{GHz/mm^2}$ prompt-charged particles will irradiate the multi-wire proportional chambers (MWPCs). To prevent the MWPCs from becoming inoperable, fast switching high voltage is applied to them to control their gas gain dynamically.

All four of the MWPCs were manufactured. They work well in actual operation. For further optimization of the filling gas and more precise measurements of basic characteristics of the MWPC, we performed performance tests using the electron beam at Kyoto University Institute for Integrated Radiation and Nuclear Science. In this poster, we will present some results of those tests.

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