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Performance evaluation of Low-Pressure Multi-Wire Drift chamber for RI beam HIROYUKI MIYA, SUSUMU SHIMOURA, AKITO SAITO, Center for Nuclear Study, Graduate School of Science, University of Tokyo, KENJIRO MIKI, Department of Physics, University of Tokyo, TAKAHIRO KAWABATA, Department of Physics, Kyoto University, MASAKI SASANO, RIKEN Nishina Center, TOMOHIRO UESAKA, Center for Nuclear Study, Graduate School of Science, University of Tokyo, HIDEYUKI SAKAI, Department of Physics, University of Tokyo, SHARAQ COLLABORATION — We are developing Low-Pressure Multi-Wire Drift Chambers (LP-MWDCs) as tracking detectors of light heavy ions with $Z = 1-8$ at 100–300A MeV in RIKEN RI Beam Factory (RIBF). The thickness of the LP-MWDCs is designed to be about 10^{-4} of the radiation length to reduce multiple scattering. The LP-MWDCs have 3 anode layers (X , U , and Y). The anode U is tilted at 30° with respect to the anode X . Pure isobutane gas is used at a pressure of 10 kPa. In order to discriminate signals of the ions from the ones of δ -rays, data equivalent to pluse heights are also recorded as well as the standard timing data. The performances of the LP-MWDCs were evaluated for RI beams such as ^6He , ^{12}B , and ^{12}N at 200–250A MeV. We report the efficiencies and position resolutions as a function of ions and high voltages.

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