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**Development of MAIKo with GEM** MOTOKI MURATA, SATOSHI ADACHI, TATSUYA FURUNO, YUKI ISHII, TAKAHIRO KAWABATA, MIHO TSUMURA, Kyoto University, HOOI JIN ONG, ISAO TANIHATA, AYYAD LIMONGE FRANCESC YASID, RCNP — We are developing a new active target MAIKo to search for the alpha condensed state (ACS) in 20Ne. The ACS is a novel concept of the conformation of the nuclear system, and is theoretically predicted to appear near the $n\alpha$ decay threshold in the self-conjugate $A = 4n$. In these states, all the alpha clusters are condensed into the lowest orbits, and their densities become diluted by a factor of 3–5. MAIKo is a kind of gas detectors in which the detection gas plays a role of the target. MAIKo is able to cover the full solid angle around the reaction point, and to detect low-energy particles emitted from the target. MAIKo is very useful to search for the ACS, because the ACS is expected to decay by emitting low-energy $n\alpha$ particles. In the present work, we constructed a new drift cage of MAIKo to introduce a gas electron multiplier (GEM). The design of the drift cage was optimized to make uniform electric field by utilizing the realistic field calculation. Since the GEM enhances the gas gain of MAIKo, it enables MAIKo to be operated at the low pressure. It is helpful to detect low-energy alpha particles because ranges of suchparticles are longer at low pressure. The detailed structure and detector performance of MAIKo with GEM will be reported in the present talk.

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