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Detection of electric field around field-reversed configuration plasma TAEKO IKEYAMA, MASANORI HIROI, TOMOHIKO ASAI, TSUTOMU TAKAHASHI, College of Science and Technology, Nihon University, YASUNORI OHKUMA, College of Industrial Technology, Nihon University, YASUYUKI NOGI — An electric field around a field-reversed configuration plasma is tried to measure by detecting electric charges induced on a surface of conductor. For this measurement, eight copper plates, each of which has a 10 cm length, 2 cm width and 0.2 mm thickness, are installed on a vacuum vessel in the NUCTE-III device. Experiments show that fluctuating electric fields with a strength of 50~100 V/m and a frequency 50~200 kHz are detected through a discharge. To investigate a generating mechanism of the electric field, a time evolution and spatial profile of the electric field are compared with those of MHD motions of the plasma obtained from an optical and magnetic measurements. From this comparison, it is found that the generation of the electric field with an $n=2$ mode correlates with a growth of a rotational instability. However, the electric field with an $n=1$ mode cannot be found any correlation with a wobble motion which is a very common $n=1$ mode one in the NUCTE-III device.

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