

Abstract Submitted
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Electric quadrupole moment of ^{25}Na . KENSAKU MATSUTA, TAKASHI NAGATOMO, HIROKI FUJIWARA, SHINICHI KUMASHIRO, RYOHEI MATSUMIYA, MASAKO OGURA, MOTOTSUGU MIHARA, MITSUNORI FUKUDA, Osaka Univ., SADA0 MOMOTA, YOICHI NOJIRI, Kochi Univ. of Tech., TAKASHI OHTSUBO, MASAHIRO OHTA, Niigata Univ., ATSUSHI KITAGAWA, MITSUTAKA KANAZAWA, MASAMI TORIKOSHI, SHINJI SATO, NIRS, TADANORI MINAMISONO, Fukui Univ. of Tech., KEI MINAMISONO, MSU, T.J.M. SYMONS, G.F. KREBS, J.R. ALONSO, LBL — Among the many Na isotopes, whose electric quadrupole moments Q are known, the precision of the Q moment of ^{25}Na ($I^\pi=5/2^+$, $T_{1/2}=59.1\text{s}$) has been extremely poor, which prevents us from the quantitative discussion of nuclear structure of the Na isotopes. In the present experiment, the Q moment of ^{25}Na has been determined precisely by means of β -NMR technique. Polarized ^{25}Na nuclei were produced through the projectile fragmentation process in the ^{26}Mg on Be collisions at 100A MeV. The NMR/NQR were observed on the ^{25}Na nuclei implanted in NaCl and/or TiO₂ single crystals, by means of the asymmetric emission of β rays. As a result, the absolute values of the magnetic and the Q moments were precisely determined to be $3.6832(3) \mu_N$ and $1.0(4)$ mb, respectively. The obtained Q moment is much precise than the old value $-64(44)$ mb. The present Q is reproduced well by the shell model value -2.7 mb.

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