Abstract Submitted
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**Electric quadrupole moment of the $^{33}$Al ground state** K. ASAHI, T.I. Tech, H. UENO, RIKEN, D.L. BALABANSKI, INRNE, J.M. DAUGAS, CEA, M. DEPUYDT, M. DE RYDT, IKS/K.U. Leuven, L. GAUDEFROY, CEA, S. GREVY, GANIL, Y. HASAMA, T.I. Tech, Y. ICHIKAWA, D. KAMEDA, RIKEN, P. MOREL, CEA, T. NAGATOMO, RIKEN, L. PERROT, IPN/Orsay, K. SHIMADA, Tohoku U., CH. STOEDEL, J.C. THOMAS, GANIL, Y. UTSUNO, JAEA, W. VANDERHEIJDEN, N. VERMEULEN, P. VINGERHOETS, IKS/K.U. Leuven, E. YAGI, K. YOSHIDA, A. YOSHIMI, RIKEN, G. NEYENS, IKS/K.U. Leuven — The ground-state $Q$moment of $^{33}$Al has been measured by applying the $\beta$-ray-detected nuclear magnetic resonance technique to spin-polarized $^{33}$Al fragments produced in the projectile fragmentation reaction. The obtained $Q$moment, $|Q_{exp}(^{33}\mathrm{Al})| = 132(16)$ $e$mb, shows a significant deviation from the theoretical value predicted in the shell model calculation with the USD interaction. The deviation will be discussed in context of possible erosion of the $N$= 20 shell gap, by comparing the experimental $Q$ and theoretical predictions from the large scale shell model calculation and the particle-vibration coupling calculation.

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