

Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Half-Life and Magnetic Moment of the First Excited State in ^{132}I

S. IZUMI, Tohoku Univ., M. TANIGAKI, Kyoto Univ., H. OUCHI, A. SASAKI, S. HOSHINO, Tohoku Univ., Y. MIYASHITA, RIKEN, N. SATO, JAEA, K. SHIMADA, T. WAKUI, T. SHINOZUKA, Tohoku Univ., Y. OHKUBO, Kyoto Univ. — The half-life and the magnetic moment of the first excited state in ^{132}I are reported. There have been a long time confusion on the half-life measurements of the first excited state in ^{132}I . Several groups performed the lifetime measurements, but the reported values range from 1 ns to 7 ns. The only reported value of the magnetic moment for this state was measured by Singh, but their result should be treated as unreliable because the time-integral perturbed angular correlation technique (TIPAC), which requires the life time data of this state, was used in their measurement. From this point of view, the half-life and the magnetic moment of this state were measured. ^{132}I was obtained as the radioactive beam of ^{132}Te and ^{132}Sb from the newly developed RF-IGISOL (Radio Frequency IGISOL system) at Tohoku University. The half-life for this state was determined to be 1.120 ± 0.015 ns by a conventional coincidence technique with a pair of BaF_2 detectors. The TDPAC measurement for the ^{132}I implanted kinematically into nickel was performed with the help of a strong hyperfine field at iodine site in nickel, and the magnetic moment of this state was determined to be $\mu = + (2.06 \pm 0.18)\mu_N$. The configuration of this state based on the present results will be discussed.

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Date submitted: 01 Jul 2009

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