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In this note the results of a remeasurement of the hyperfine magnetic field at ^{67}Ge in an iron host are reported. Morgenstern et al.¹⁾ using alloys of about 5 atomic percent Ga in Fe, in an external magnetic field of a few kG, obtained a value of $H_{\text{hf}}(\text{Fe}) = +70.0 \pm 3.0$ kG. The charge-exchange $^{71}\text{Ga}(p,n)^{71}\text{Ge}$ reaction was used to populate the 175-keV ($J^\pi = 5/2^-$; $T_{1/2} = 79.0 \pm 2.0$ ns) level. Raghavan et al.²⁾ report a value of 60 ± 2 kG for the hyperfine field at ^{67}Ge in Fe. An enriched $1\text{mg}/\text{cm}^2$ ^{54}Fe foil clamped together with a polycrystalline foil of Fe was used as the target, and an external magnetic field of about 1.7 kOe was applied perpendicular to the reaction plane. The reaction used to produce ^{67}Ge was $^{54}\text{Fe}(^{16}\text{O}, 2p\text{n})$.

In the present work the ^{67}Ge nuclei were produced by means of the $^{56}\text{Fe}(^{14}\text{N}, 2np)$ reaction at $E_{\text{lab}} = 45$ MeV, using as

a target a 0.5 mil thick natural Fe foil, in the gap of a C-magnet which produced a field of about 300 gauss to saturate the foil. For this geometry the demagnetising field is negligible. The ^{14}N beam was pulsed with a repetition period of 400 ns. The 734 keV γ -ray in the 751.7 to 18.7 -keV transition³⁾ was observed with two NaI(Tl) detectors placed at $\pm 45^\circ$ to the beam direction. The delayed time spectrum of the γ -rays was measured with a time-to-amplitude converter and standard fast-slow electronics with a time resolution of ~ 8 ns. The half-life of the 751.7 -keV level was found to be 70 ± 2 ns in agreement with the previously known value⁴⁾. The ratio $R(t)$ obtained with the normalized difference in counting rates for the two field directions was fitted to the function $A \sin^2 \omega_L t$ and is shown in figure 1. From the measured Larmor frequency ω_L and the known g-factor of -0.945 ± 0.030 ⁴⁾, a value of 61.4 ± 2 kG is obtained for the hyperfine field at ^{67}Ge in Fe in agreement with the value of Raghavan et al.²⁾. A random field measurement in spite of poor statistics gave the same value.

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