a result of the existence of a $g_{7/2}$ state approximately the same energy. For the states $d_{5/2}$ and $d_{3/2}$ ($E_p=6.03$ MeV), we preferred to use the data of Ref. 4, since it contains complete angular distributions. This reference however, does not contain data on the remaining two states of Table I. The relative errors between the data of Refs. 1 and 4 may be larger than indicated in Table I.

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g Factors of the 211- and 240-keV States of ^{195}Pt

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The statistical accuracy of earlier results was improved by new measurements on $Fe_{72.5}Pt_{27.5}$ and $Fe_{50}Pt_{50}$ targets. In reevaluating the data, corrections were made for beam bending and beam shift, and new data regarding the decay scheme of ^{195}Pt were taken into account. The g factors of the 211- and 240-keV states of ^{195}Pt were found to be 0.104 ± 0.021 and 0.146 ± 0.019, respectively, in disagreement with current theoretical predictions. The value of the hyperfine magnetic field at Pt nuclei in the $Fe_{72.5}Pt_{27.5}$ alloy is in agreement with static measurements, that for the $Fe_{50}Pt_{50}$ alloy is -870 ± 60 kG.

In a previous paper[1] data were published on the g factors of the 211- and 240-keV energy states of ^{195}Pt. The measurements were performed using 2.5-MeV protons for Coulomb excitation of Pt nuclei embedded in Fe. We recently performed further measurements with the same method and arrangement on $Fe_{72.5}Pt_{27.5}$ and $Fe_{50}Pt_{50}$ alloys. A new magnet with much less fringing field than the earlier one was employed. The beam bending and beam shift were calculated for both the old and new magnets from the measured $H(z)$ magnetic-field distribution along the path of the bombarding protons. For the polarization of targets of 27.5- and 50-at.% Pt content, external magnetic fields of 1500 and 2000 G were used, respectively. The targets were cooled by liquid nitrogen, but due to the heating effect of the bombarding 0.5-μA intensity beam the local temperature at the spot increased to 110°K, as measured by a thermocouple soldered to the target.

Table I shows the previous and the new $\omega\tau$ data, corrected for beam bending. In calculating $\omega\tau(211)$ we took into account the recent determination of the branching ratio from the 240-keV state[2] and the effect on $\omega\tau(211)$ of the nonobserved intermediate radiation.[3]

Comparing our $\omega\tau(329\text{ keV}, 110°\text{K})_{27.5\%}$ data with those of Kenyon, Keszthelyi, and Cameron[4] by averaging the results of measurements from radioactive nuclei at room temperature, and using the average hyperfine-magnetic-field data of Béraud *et al.*[5] evaluated at 0°K for dilute FePt alloys, we get

$$H_{Pt_{27.5}Fe_{72.5}, 0°K} = -1260 \pm 62 \text{ kG}. \qquad (1)$$

In the comparison the Curie temperature of 80°C determined by Tarnóczy[6] for this alloy was taken and it was supposed that the temperature dependence of the hyperfine magnetic field at the Pt sites follows the Brillouin curve.

TABLE I. $\omega\tau$ values (in mrad) obtained with the old and new magnets for the 329-keV state of ^{194}Pt and for the 240- and 211-keV states of ^{195}Pt in $Fe_{72.5}$ and $Fe_{50}Pt_{50}$ alloys.

Alloy	Magnet	329 keV		240 keV		211 keV	
		$\omega\tau$	$\overline{\omega\tau}$	$\omega\tau$	$\overline{\omega\tau}$	$\omega\tau$	$\overline{\omega\tau}$
$Pt_{27.5}Fe_{72.5}$	Old	82(4)	84.5(28)	151(20)	151(19)	48(19)	58(14)
$Pt_{27.5}Fe_{72.5}$	New	87(4)		148(85)		68(22)	
$Pt_{50}Fe_{50}$	New	61.0(35)		110(19)		38(13)	

TABLE II. Theoretical and experimental values of g factors together with the spin and mean-lifetime values of excited levels in ^{195}Pt.

E (keV)	I	τ (psec)	g_{exp}	g_{theor} [a]
99	$\frac{3}{2}$	229(16) [b]	−0.42(7) [c]	−0.05
130	$\frac{5}{2}$	973(40) [d]	0.351(24) [e]	0.35
211	$\frac{3}{2}$	97(7) [f]	0.104(21) [g]	−0.02
240	$\frac{5}{2}$	178(15) [h]	0.146(19) [g]	0.37

[a] See Ref. 8.

[b] Weighted average of values reported in Refs. 9 and 10.

[c] Weighted average of values reported in Refs. 10 and 12.

[d] Weighted average of values reported in Refs. 13 and 14.

[e] Weighted average of values reported in Refs. 15, 16, and 17.

[f] See Ref. 18.

[g] Present measurement.

[h] The $B(E2)_{exc}$ data for this level were taken from Refs. 19–21 but corrected for the new value of the branching ratio of Ref. 2, then renormalized with the data of Ref. 11. This new value of $B(E2)_{exc, 240\,keV} = (0.548 \pm 0.025) \times 10^{-48} e^2\,cm^2$. The lifetime value given here is a weighted average of the value obtained from this new $B(E2)_{exc}$ and the value found in note of Ref. 22 added in proof. The error in the lifetime value includes an estimated statistical error of the branching ratio and conversion coefficient of about 10%.

The excellent agreement of the hyperfine-magnetic-field value with that of Buyrn *et al.*[7] measured by the Mössbauer method on an alloy of the same composition shows that the perturbed angular distribution of γ rays following Coulomb excitation of low recoil energy is a useful method for hyperfine-structure investigations.

A similar comparison of our $\omega\tau$(329 keV, 110°K)$_{50\%}$ data yields

$$H_{Pt_{50}Fe_{50}, 110^\circ K} = -870 \pm 60 \text{ kG}. \qquad (2)$$

The temperature correction could not be calculated in this case because the Curie temperature for an alloy of this composition has not been determined.

Using these values of magnetic field and mean lifetime values taken from the literature,[8-22] we calculated the g factors shown in Table II. Also displayed in the table are the g factors of the lower-lying excited states together with Gal's theoretical predictions[13] based on the core-excitation model. The agreement between the experimental and theoretical g factors is rather poor, showing that the configuration is more complex than the simple core excitation of a system comprising a coupled core and $p_{1/2}$ neutron.

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