[9]. Then the unitary structure of the strangeness-conserving nonlepton interaction is conserved, and the parity-changing interaction acquires the following structure

$$\Delta L^{(e^2)}(|\Delta S| = 1,\ CP = +1,\ P = -1) = b_3\, 10_{3/2} + b_2\, \overline{10}_{1/2} + b_1\, 8^{a}_{1/2} + \text{c.c.}$$

and when $\tan\theta = 0.22$ we get $b_3 : b_2 : b_1 \simeq 1 : 18 : 37$. Cases 2) and 4) can be realized, for example, if the current $j^{u(0)}$ [7,8] includes the 8-th or 3-rd component of the octet with (V - A) → (V + A). The questions of unitary symmetry in the model of [7,8] will be considered in greater detail elsewhere.

SMALL ANGLE ELASTIC SCATTERING OF POLARIZED 4-MeV NEUTRONS BY MEDIUM AND HEAVY NUCLEI

G. V. Gorlov, N. S. Lebedeva, and V. M. Morozov

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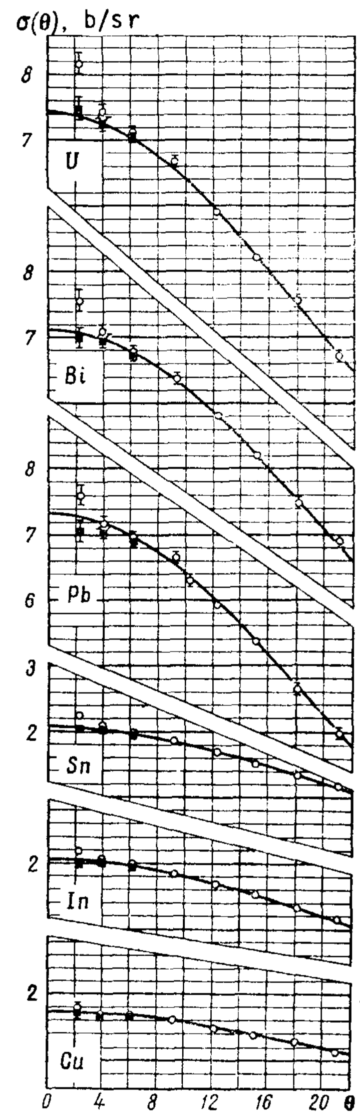
We have carried out experiments aimed at investigating the elastic scattering of polarized 4-MeV neutrons by Cu, In, Sn, Pb, Bi, and U nuclei at scattering angles 2 - 21°. The polarized-neutron source was the D-D reaction (the polarization of the scattered neutrons was ~14.8% [1,2]). It was observed that for all the investigated nuclei the differential cross section shows an appreciable rise at $\theta = 2°$, and in scattering through angles $\theta \leq 6°$ the polarizing ability is appreciable in magnitude and increases with decreasing scattering angle. An analysis of the results on the polarizing ability of nuclei in the angle region 2 - 9° has shown that they are in good agreement with the predictions of Schwinger [3] with respect to the Coulomb scattering of neutrons at small angles, due to the interaction of the magnetic moment of the moving neutron with the Coulomb field of the nucleus [4]. The circles in the figure denote the experimentally obtained differential neutron elastic scattering cross sections. By eliminating the Coulomb-scattering cross sections (calculated with allowance for the angular resolution of the experiment) from the experimental data at $\theta = 6°$, we obtain the values designated by the full squares. The contribution of the Coulomb cross section at larger scattering angles is negligibly small. The differential cross section curves shown in the figure were obtained by multiplying by a suitable normalization factor (from 1.05 to 1.13) the differential cross sections



calculated with an optical potential whose parameters were chosen on the basis of the authors' experimental data [5]. Thus, the experimentally observed form of the differential cross sections can be well described under the assumption that only nuclear and Coulomb scattering exist. Apparently the use of more reliable nuclear-potential models for each nucleus, and not a model purposely averaged over the entire periodic table, is essential for estimates of the upper limit of the neutron polarizability coefficient [6] and the "force" of the peripheral part (tail) of the nuclear potential [7]. Comparison of the squares of the imaginary part of the forward nuclear-potential scattering, calculated with the aid of the optical theorem from the experimental data on the total interaction cross sections with the data on the forward nuclear elastic scattering cross sections obtained by extrapolation to $\theta = 0°$, shows that at 4-MeV neutron energy the fraction of the contribution of the square of the real part to the cross section of forward nuclear-potential scattering is small for the investigated nuclei.

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NUCLEAR MAGNETOACOUSTIC RESONANCE AND SPIN-LATTICE RELAXATION IN ANTIFERROMAGNETS OF THE EASY PLANE TYPE

E. A. Turov and A. I. Timofeev
Institute of Metal Physics, USSR Academy of Sciences; Ural State University

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In this note we report results of calculation of the coefficient (α) of resonant absorption of ultrasound (at the NMR frequency) and of the rate of spin-lattice relaxation of the nuclear spins ($1/T_1$) in antiferromagnets of the "easy plane" type (AF-EP). The mechanism of interaction between the nuclear spins and the lattice is taken to be their indirect coupling via the spin wave [1].

Let the coordinate axis be chosen such that X is parallel to the external magnetic field H, which lies in the "easy plane" (EP), and Y is directed along the antiferromagnetism axis L. Then the lattice vibrations produce at the nuclei, as a result of the indicated