can be of the order of 10^{-3} is $K_2^0 \to 2\pi$, the violation taking place in the mass operator of the (K_1, K_2) system.*

Indeed, the CP-even part in the mass operator is of the order of $G^2 m_N^4/(2\pi)^4$. The contribution of the considered CP-odd interaction is of the order of $G^3 m_N^2/(2\pi)^6$. Consequently the effect of CP-noninvariance in the mass operator is of the order of $G\Lambda^2/(2\pi)^2 \cdot \Lambda^2/m_N^2$, which amounts to $\sim 10^{-3}$ when $\Lambda \sim 10$ GeV.

The foregoing CP-parity violation mechanism does not explain the preliminary data on the relative probability of the decays $K_2^0 \to 2\pi^0$ and $K_2^0 \to \pi^+ + \pi^-$ [6]. Its results coincide with those of superweak interaction [7], i.e., it leads to a noticeable effect of CP-parity violation only in $K_2^0 \to 2\pi$ decays.

It is obvious that the proposed mechanism for CP-noninvariance in $K_2^0 \to 2\pi$ decays takes place in the fully CP-odd theory of weak interaction [8]. The latter, however, leads to many consequences which do not arise in the case of superweak interaction.

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*Another such effect is the suppression of the $K_2^0 \to \mu^+ + \mu^-$ decay amplitude by a factor 10^3 compared with the $K_1^0 \to \mu^+ + \mu^-$ decay amplitude.

INTERBAND TRANSITIONS IN METALS, DUE TO BRAGG REFLECTION OF ELECTRONS

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In our earlier paper [1] we related the singularities in the variation of the interband conductivity σ in the infrared and visible parts of the spectrum with the Fourier components of the pseudopotential V_g. The positions of the maxima of σ were used to calculate V_{111} and V_{200}, the two fundamental Fourier components of the pseudopotential of indium. Similar considerations were advanced also in a theoretical paper by Harrison [2].

In this paper we consider interband transitions connected with Bragg splitting, and derive a method for determining the Fourier components of the pseudopotential from optical measurements.

The results of this study show that the fundamental structure of σ is determined in the indicated spectral region by the Bragg reflection of the electrons, and not by transitions connected with high-symmetry points, as is the case in semiconductors.

We have calculated the interband conductivity σ under the following assumptions: the wave function of the electrons is taken to be a sum of two plane waves; the electron energy was determined by the expression obtained from the solution of the second-order secular equation; the Hamiltonian for the interaction between the electrons and the light was taken in the form $H_i = i\hbar e/mc(\nabla\vec{A})$, where $\vec{A}$ is the vector potential of the electromagnetic field, e and m are the charge and mass of the free electron, and c is the speed of light; the relaxation processes were taken into account with the aid of a Lorentz function with a parameter γ characterizing the smearing of the energy levels. For a cubic crystal we obtained

$$\sigma = \frac{1}{\hbar} \cdot \frac{e^2}{\pi^2 \hbar^2} \cdot \sum_g n_g p_g \cdot I,$$

$$I = \frac{\gamma'}{\omega'} \int_0^\infty \frac{dx}{\sqrt{1+x^2}\,[(\sqrt{1+x^2} - \omega')^2 + \gamma'^2]} ,$$

$$\gamma' = \gamma/(\hbar\omega_g), \quad \omega' = \omega/\omega_g, \quad \hbar\omega_g = 2\,|V_g| .$$

Here n_g is the number of physically equivalent Bragg planes g, p_g is the distance from the center of the band to the corresponding Bragg plane in momentum space, and ω is the cyclic frequency of the light. The summation is carried out over the physically nonequivalent Bragg planes.

An analysis of the function $\sigma(\omega)$ shows it to have maxima at the frequencies $\omega_{max} = 2|V_g|/t \approx 2|V_g|$. The coefficient t depends on γ' and its maximum deviation from unity does not exceed 6%. A detailed exposition of this theory will be published separately.

Using the results of this theory and the experimental data for aluminum [3] we get: $|V_{200}| = 0.72 \pm 0.01$ eV, $|V_{111}| = 0.22 \pm 0.03$ eV, in good agreement with data obtained from the de Haas - van Alphen effect [4], namely $V_{200} = 0.76$ eV and $V_{111} = 0.24$ eV.

Comparison of the experimental and theoretical absolute values of $\sigma(\omega)$ shows good agreement between theory and experiment.

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E R R A T A

In article by A. I. Golovashkin et al., Vol. 6 No. 5, p. 143, in the first formula read "$\sigma = \frac{1}{12}$ ..." in lieu of "$\sigma = \frac{1}{h}$ ..."