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Scattering of Slow Neutrons in Ferrites and Antiferromagnetics

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e_z is the projection of the vector $\vec{e}$ ($\vec{e} = \vec{q}\vec{q}^{-1}$, $\vec{q}$ - transferred momentum). The following equation is obtained for ferrites:

$$\frac{d\sigma_o}{d\Omega} = \frac{1}{2} r_o^2 \gamma_o^2 \frac{(2\pi)^3}{v_o} \Big\{ S_1^2 |F_1(q)|^2 \left[1-2G_1(T)\right] e^{-2W_{1q}} + S_2^2 |F_2(q)|^2 \left[1-2G_2(T)\right]$$

$$\times\ e^{-2W_{2q}} - 2S_1 S_2 \left[1-G_1(T)-G_2(T)\right]$$

$$\times\ e^{-W_{1q}-W_{2q}} \mathrm{Re}\, F_1(q) F_1^*(q) e^{i(q,\ r_1-r_2)} \Big\} \sum_\tau \delta(q+\tau)(1-e_z^2) \qquad (11)$$

$G_\nu(T)$ is according to the spin wave theory of antiferromagnetics

$$G(T) = \begin{cases} \dfrac{\gamma\mu^2}{12a^3\theta_c} \left(\dfrac{T}{\theta_c}\right)^2, & \dfrac{\mu M_o \sqrt{2\beta\gamma}}{T} \ll 1. \\[2ex] \dfrac{\gamma\mu^2}{\pi^2 a^3 \theta_c} \left(\dfrac{T}{\theta_c}\right)^2 \left(\dfrac{2\mu M_o \sqrt{2\beta\gamma}}{T}\right)^{3/2} \exp\left\{-\dfrac{\mu M_o \sqrt{2\beta\gamma}}{T}\right\}, & \dfrac{\mu M_o \sqrt{2\beta\gamma}}{T} \gg 1. \end{cases}$$

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and for ferrites

$$G_{1,2}(T) = \frac{\mu M_{o(1,2)}\Gamma(3/2)\zeta(3/2)}{4\pi^2 a^3 (M_{10}-M_{20})^2}\left(\frac{T}{\theta_c}\right)^{3/3}$$

; β is the magnetic anisotropy constant, $\gamma \sim \theta_c/\mu M_o$. The neutron scattering cross section (in the case of emission or absorption of one spin wave) is given by

$$\frac{d\sigma_{\pm 1,2}}{d\Omega\, dE'} = \frac{r_0^2 \gamma_0^2}{4}\sqrt{S_1 S_2}\int dk \frac{p'}{p}\sum_\tau \delta(q \mp k + \tau)\left(n_{1,2} + \frac{1}{2} \pm \frac{1}{2}\right) \times$$
$$\times \{u_k^2 |F_1(q)|^2 e^{-2W_{1q}} + v_k^2 |F_2(q)|^2 e^{-2W_{2q}} - \tag{18}$$
$$- 2u_k v_k e^{-W_{1q}-W_{2q}} \mathrm{Re}\, F_1(q) F_2^*(q) e^{iq(r_1-r_2)}\}(1+e_z^2)\delta(E - E' \mp \varepsilon_{1,2}(k)),$$
$$n_{1,2}(k) = [\exp\{\varepsilon_{1,2}(k)/T\} - 1]^{-1}.$$

If $a|\vec{q} + \vec{\tau}| \ll 1$ (a - lattice parameter) so is for the antiferro-

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magnetics:

$$\frac{d\sigma^{\tau}_{\pm 1,2}}{d\Omega\, dE'} \approx \frac{1}{4} S r_0^2 \gamma_0^2 \frac{p'}{p} \frac{\gamma \mu M_0}{\varepsilon(\mathbf{q}+\boldsymbol{\tau})} \left[n_{1,2}(\mathbf{q}+\boldsymbol{\tau}) + \frac{1}{2} \pm \frac{1}{2} \right] |F(\boldsymbol{\tau})|^2 e^{-2W_{\tau}} \times$$
$$\times (1 - \cos \mathbf{r}_{12}\mathbf{q})(1 + \tau_z^2)\, \delta[E - E' \mp \varepsilon_{1,2}(\mathbf{q}+\boldsymbol{\tau})] \qquad (19)$$

and for ferrites:

$$\frac{d\sigma^{\tau}_{\pm 1,2}}{d\Omega dE'} \approx r_0^2 \gamma_0^2 \frac{\sqrt{S_1 S_2}}{4(S_1 - S_2)} \frac{p'}{p} \left[n_{1,2}(\mathbf{q}+\boldsymbol{\tau}) + \frac{1}{2} \pm \frac{1}{2} \right] \{ S_1 |F_1(\boldsymbol{\tau})|^2 e^{-2W_{1\tau}} +$$
$$+ S_2 |F_2(\boldsymbol{\tau})|^2 e^{-2W_{2\tau}} - 2\sqrt{S_1 S_2}\, \mathrm{Re}\, F_1(\boldsymbol{\tau}) F_2^*(\boldsymbol{\tau}) e^{i(\mathbf{r}_1 - \mathbf{r}_2, \boldsymbol{\tau})} e^{-W_{1\tau} - W_{2\tau}} \} \times$$
$$\times (1 + \tau_z^2)\, \delta[E - E' \mp \varepsilon_{1,2}(\mathbf{q}+\boldsymbol{\tau})] \qquad (20)$$

The authors thank A. I. Akhiyezer for suggesting this topic and his interest. A. S. Borovik-Romanov is mentioned. There are 18 references: 10 Soviet, 6 US, 1 British, and 1 Dutch.

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B006/B077

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR (Leningrad Institute of Physics and Technology of the Academy of Sciences USSR). Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Institute of Physics and Technology of the Academy of Sciences Ukrainskaya SSR)

SUBMITTED: July 2, 1960

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26715
S/056/61/041/005/030/038
B102/B138

24.2200 (1144, 1147, 1160)

AUTHORS: Izyumov, Yu. A., Maleyev, S. V.

TITLE: Scattering of polarized neutrons in ferromagnetic and antiferromagnetic materials

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 5(11), 1961, 1644 - 1648

TEXT: In a previous paper (ZhETF, 40, 1224, 1961) Maleyev showed that slow unpolarized neutrons are magnetically scattered in ferromagnetic materials. Part of the cross section is due to inelastic magnetic scattering and part to magnetic-vibrational scattering. These terms are investigated in the present paper also, but for the case of polarized neutrons, when the polarization vector not only varies in value but may also rotate. It is shown how the parts of the cross section which are due to inelastic magnetic and magnetic-vibrational scattering can, for a given direction, be separated. For ferromagnetic materials the neutron polarization vector after scattering is defined by $\vec{P} = Sp\ f^{+}\vec{\sigma}f_{Q}/Sp\ f^{+}f_{Q}$, where

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$\vec{\sigma}/2$ is the neutron spin and $\varrho = (1+\vec{\sigma}\vec{P}_o)/2$ is the spin matrix of the incident neutron density; f is the scattering amplitude, determined according to Halpern-Jonson by

$$f = \frac{1}{N}\sum_l e^{i\mathbf{q}\mathbf{R}_l}\left[A_l + \frac{1}{2}B_l(\mathbf{I}_l\sigma)\right] - \frac{N_m}{N}\frac{1}{N_m}\sum_j e^{i\mathbf{q}\mathbf{R}_j} \times \times \gamma r_0 F(q)(\sigma - (\mathbf{e}\sigma)\,\mathbf{e}, \mathbf{S}_j). \quad (3).$$

$\vec{R}_l$ and $A_l + B_l(\vec{I}_l\vec{\sigma})/2$ denote coordinate and amplitude of nuclear scattering for the l-th atom, $\vec{I}_l$ its nuclear spin, N is the total number of atoms in the system, N_m the number of magnetic atoms, $\vec{R}_j$ and $\vec{S}_j$ - coordinate and spin of the j-th magnetic atom, $\vec{q} = \vec{p}-\vec{p}'$ the momentum trans[illegible]d from the neutron to the scatterer, $\vec{e} = \vec{q}/q$, F(q) the magnetic formfactor of the atom, γ the absolute magnitude of the magnetic moment of the neutron in nuclear magnetons and $r_o = e^2(mc^2)^{-1}$ the electron radius. With N_m = N and $\sum^{l} \equiv \sum^{j}$, it is easy to calculate the vector of polarization due to nuclear

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scattering and interference between nuclear and magnetic scattering, and the vector of polarization due to inelastic magnetic scattering. The polarization vector for incoherent nuclear scattering of the neutrons is given by

$$\mathbf{P}_{\text{нек}} = \mathbf{P}_0 \frac{\overline{|A_l|^2} - |\overline{A}_l|^2 - \frac{1}{12}\overline{|B_l|^2 I_l(I_l+1)}}{\overline{|A_l|^2} - |\overline{A}_l|^2 + \frac{1}{4}\overline{|B_l|^2 I_l(I_l+1)}}. \qquad (4),$$

for scattering without change of the magnetic state of the scatterer:

$$\begin{aligned}\mathbf{P}_{nm} = \{&\mathbf{P}_0|\overline{A}_l|^2 - 2\gamma r_0 F(q)\langle S_z\rangle(\mathrm{Re}\,\overline{A}_l\mathbf{M} + \mathrm{Im}\,\overline{A}_l[\mathbf{M}\mathbf{P}_0]) + \\ &+ \gamma^2 r_0^2 F^2(q)\langle S_z^2\rangle[2\mathbf{M}(\mathbf{M}\mathbf{P}_0) - \mathbf{P}_0 M^2]\}\{|\overline{A}_l|^2 - \\ &- 2\gamma r_0 F(q)\langle S_z\rangle\,\mathrm{Re}\,\overline{A}_l(\mathbf{M}\mathbf{P}_0) + \gamma^2 r_0^2 F^2(q)\langle S_z^2\rangle M^2\}^{-1}, \end{aligned} \qquad (5)$$

with $\vec{M} = \vec{m} - (\vec{e}\vec{m})\vec{e}$, where $\vec{m}$ is the unit vector in the direction of magnetization of the scatterer, $\langle S_z\rangle$ is the mean atomic-spin projection on to the direction of magnetization, $\langle S_z\rangle^2 = \langle S_z^2\rangle$. The polarization vector for scattering with emission (+) or absorption (-) of a spin wave is given by

$$\mathbf{P}_m^{\pm} = \frac{\mp 2\mathbf{e}(\mathbf{em}) + 2\mathbf{M}_x(\mathbf{M}_x\mathbf{P}_0) + 2\mathbf{M}_y(\mathbf{M}_y\mathbf{P}_0) - \mathbf{P}_0(M_x^2 + M_y^2)}{1 + (\mathbf{em})^2 \pm 2(\mathbf{P}_0\mathbf{e})(\mathbf{em})}. \qquad (7)$$

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($\vec{m}$ is perpendicular to the xy plane) and the mean polarization vector for neutron scattering in a given direction $\vec{n}$ is defined by

$$P = \frac{P_{\text{неи}}\sigma_{\text{неи}}(n) + P_{nm}\sigma_{nm}(n, P_0) + P_m^+\sigma^+(n, P_0) + P_m^-\sigma^-(n, P_0)}{\sigma_{\text{неи}}(n) + \sigma_{nm}(n, P_0) + \sigma_m^+(n, P_0) + \sigma_m^-(n, P_0)} . \quad (8)$$

where $\sigma_{\text{нек}}$ is the cross section for incoherent nuclear scattering, and

$$\frac{\sigma_{nm}(n, P_0)}{\sigma_n(n)} = 1 + \frac{-2\gamma r_0 F(q)\langle S_z\rangle \operatorname{Re}\overline{A}_l M P_0 + \gamma^2 r_0^2 F^2(q)\langle S_z^2\rangle M^2}{|\overline{A}_l|^2} . \quad (9)$$

$$\frac{\sigma_m^{\pm}(n, P_0)}{\sigma_m^{\pm}(n)} = \frac{1 + (em)^2 \pm 2(P_0 e)(em)}{1 + (em)^2} , \quad (10) ,$$

where $\sigma_n(\vec{n})$ is the nuclear scattering cross section for unpolarized neutrons and $\sigma_m(\vec{n})$ that for magnetic scattering of unpolarized neutrons; $\sigma_{nm}^{\pm}(\vec{n},\vec{P}_0)$ is the cross section of coherent scattering of polarized neutrons. If $\vec{P}$ and the total cross section $\sigma(\vec{n},\vec{P}_0) = \sigma_{mn}(\vec{n},\vec{P}_0)+\sigma_m(\vec{n},\vec{P}_0) + \sigma_m(\vec{n},\vec{P}_0)$ are measured, the relations given make it possible to determine

$\sigma_{nm}(\vec{n},\vec{P}_o)$, $\sigma_m(\vec{n},\vec{P}_o)$ and $\sigma_n(\vec{n},\vec{P}_o)$ and also $\sigma_n(\vec{n})$ and $\sigma_m(\vec{n})$. For scattering in antiferromagnetic materials $\vec{P}_{incoh} = \alpha\vec{P}_o$ with

$$\alpha = \frac{\sum\{\overline{(|A_l|^2 - |\bar{A}_l|^2)} - \frac{1}{12}\overline{|B_l|^2 I_l(I_l+1)}\}e^{-2W_l}}{\sum\{(|A_l|^2 - |\bar{A}_l|^2) + \frac{1}{4}\overline{|B_l|^2 I_l(I_l+1)}\}e^{-2W_l}}, \qquad (12)$$

for elastic scattering. In coherent nuclear scattering there is no change in polarization. The vector of polarization due to scattering without change of the magnetic state of the scatterer is given by $\vec{P}_{mo} = 2(\vec{M}\vec{P}_o)\vec{M}/M^2-\vec{P}_o$ with $\vec{M} = \vec{m}-(\vec{e}\vec{m})\vec{e}$ for an antiferromagnetic with two sublattices. When, during scattering, the number of spin waves is changed by one,

$$\mathbf{P}_{m1} = 2\,\frac{\mathbf{P}_{0\perp} - \mathbf{e}_\perp(\mathbf{P}_0\mathbf{e}) + \mathbf{e}(\mathbf{em})(\mathbf{MP}_0)}{1+(\mathbf{em})^2} - \mathbf{P}_0, \qquad (16)$$

holds. $\vec{P}_{o\perp}$ and $\vec{e}_\perp$ are components of $\vec{P}_o$ and $\vec{e}$, $\vec{P}_{o\perp} = \vec{P}_o - (\vec{P}\vec{m})\vec{m}$. With

$$\mathbf{P} = \frac{\alpha\sigma_{\text{нек}}(\mathbf{n})\mathbf{P}_0 + \sigma_{m0}(\mathbf{n})\mathbf{P}_{m0} + \sigma_{m1}(\mathbf{n})\mathbf{P}_{m1}}{\sigma_n(\mathbf{n}) + \sigma_{m0}(\mathbf{n}) + \sigma_{m1}(\mathbf{n})}. \qquad (17)$$

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α, $\sigma_{mo}(\vec{n})$ and $\sigma_{m1}(\vec{n})$ can be determined when $\vec{P}_o$ and $\sigma(\vec{n}) = \sigma_n(\vec{n}) + \sigma_{mo}(\vec{n}) + \sigma_{m1}(\vec{n})$ are known. There are 4 references: 3 Soviet and 1 non-Soviet. The latter reads as follows: O. Halpern, M. Jonson. Phys. Rev., 55, 898, 1939.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR (Leningrad Physicotechnical Institute of the Academy of Sciences USSR) Institut fiziki metallov Akademii nauk SSSR (Institute of Physics of Metals of the Academy of Sciences USSR)

SUBMITTED: June 9, 1961

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MALEYEV, S.V.

Polarization due to scattering of slow neutrons in ferromagnetics.
Zhur. eksp. i teor. fiz. 40 no.4:1224-1227 Ap '61. (MIRA 14:7)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
(Neutrons--Scattering) (Magnetic materials)

MALEYEV, S.V.

Analytic properties of the single-Fermion Green function in the quantum theory of many particles. Zhur. eksp. i teor. fiz. 41 no.5:1675-1680 N '61. (MIRA 14:12)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
(Potential, Theory of)
(Quantum theory)

44170

S/181/62/004/012/017/052
B104/B102

24 6500

AUTHORS: Maleyev, S. V., Bar'yakhtar, V. G., and Suris, R. A.

TITLE: The scattering of slow neutrons from complex magnetic structures

PERIODICAL: Fizika tverdogo tela, v. 4, no. 12, 1962, 3461-3470

TEXT: The elastic scattering of slow polarized neutrons is investigated for magnetic substances in which the orientation of the atomic spins changes periodically from one atom to the other (e.g. Dy, Er and others). The period of these changes depends on the lattice constant and on temperature. Starting from the representation of the neutron scattering amplitude as given by O. Halpern and M. Jonson (Phys. Rev., 55, 898, 1939), the equations

$$\sigma_{mi}^{(\pm)}(\mathbf{q}) = r_0^2\gamma^2 F^2(\mathbf{q})\langle S^2\rangle e^{-2W_q} d(\mathbf{q}\pm\mathbf{k})(L_i^2 + M_i^2 \pm 2\mathbf{P}_0[\mathbf{L}_i\mathbf{M}_i]), \qquad (15)$$

$$\mathbf{P}_{mi}^{(\pm)}(\mathbf{q}) = \frac{2(\mathbf{L}_i\mathbf{P}_0)\mathbf{L}_i + 2(\mathbf{M}_i\mathbf{P}_0)\mathbf{M}_i - \mathbf{P}_0(L_i^2 + M_i^2) \mp 2[\mathbf{L}_i, \mathbf{M}_i]}{L_i^2 + M_i^2 \pm 2\mathbf{P}_0[\mathbf{L}_i\mathbf{M}_i]}. \qquad (16)$$

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are obtained for the scattering cross section and for the polarization of the scattered neutrons. Here $\vec{q}$ is the momentum transferred to the crystal by the neutron, $\vec{k}$ is the wave vector of the neutron, $\vec{L}_i$ = Re $\vec{N}_i$ and $\vec{M}_i$ = Im $\vec{N}_i$, S_l is the spin of a magnetic atom,

$$N_{0,i} = a_{0,i} - (a_{0,i}e)\,e.$$

$$e_{\zeta l} = a_0 + \sum_i (a_i e^{-ik_i R_l} + a_i^* e^{ik_i R_l}), \qquad (7),$$

$$S_l = e_{\zeta l} S_{\zeta l} + e_{\eta l} S_{\eta l} + e_{\xi l} S_{\xi l}, \qquad (6),$$

$\varepsilon_{\zeta l}$ is the unit vector in the direction $\langle \bar{S}_l \rangle$. From (16) it follows that the scattered neutrons are polarized along the vector $[\vec{L}_i \vec{M}_i]$ if the incident neutrons are unpolarized. For determining the vectors $\vec{a}_i$ and $\vec{a}_i^*$, the vectors $\vec{L}_i$ and $\vec{M}_i$ must be known for two different

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reflections, whereby the angle between the two vectors $\vec{\xi} = \vec{q} \cdot \vec{q}^{-1}$ must not be small. The determination of the vectors $\vec{L}_1$ and M_1 for a fixed reflection is discussed. Finally, the scattering from the following structures are discussed: (1) Simple umbrella structure; (2) modulated umbrella structure; (3) umbrella structure with revolution; (4) slanted fence; (5) linear spin wave.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: July 6, 1962

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S/056/62/043/003/046/063
B108/B102

AUTHOR: Maleyev, S. V.

TITLE: Properties of a rarefied Fermi gas with attraction

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 3(9), 1962, 1044 - 1052

TEXT: A rarefied Fermi gas with weak interaction at absolute zero is considered. The operator for the fermion self-energy,

$$M(p) = \frac{i}{2\pi i}\int d^4 l\, G(l)\,[2\Gamma(p, l, 0) - \Gamma(p, l, p - l)], \qquad (1),$$

is found by summing up the graphs of perturbation theory. $\Gamma(p,l,q)$ is the effective energy of two-particle interaction; in the form $\Gamma(\vec{g},\Omega)$, where $2\vec{g} = \vec{p} + \vec{l}$, it can be rendered in terms of the two-particle Green function (V. M. Galitskiy. ZhETF, 34, 151, 1958). Ω is the total energy $\omega_p + \omega_l$. In first approximation, the solution of Eq. (1) is

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$$M(p) = \frac{1}{2\pi i}\int d^4 l \Gamma_0 (p+l)\, G_0(l), \quad (18),$$

$$\Gamma_0 (p+l) = C\delta(\mathbf{p}+\mathbf{l})\,\delta\,[1 + A I_0(\Omega)], \quad (19).$$

This result was obtained by introducing coupled Cooper pairs which may be observed in a temperature independent contribution to the current due to tunneling, where G_o is the Green function for particles without any interaction. G_o has one pole which is responsible for the gap in the spectrum of the single fermion excitations.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR (Leningrad Physicotechnical Institute of the Academy of Sciences USSR)

SUBMITTED: April 9, 1962

S/181/63/005/004/034/047
B102/B186

AUTHORS: Bar'yakhtar, V. G., and Maleyev, S. V.

TITLE: Inelastic scattering of slow neutrons in substances with spiral magnetic structure

PERIODICAL: Fizika tverdogo tela, v. 5, no. 4, 1963, 1175 - 1180

TEXT: The inelastic scattering of slow neutrons from helical magnetic structures (such as e.g. in Dy at 87 - 179°K or Er at 4.2 - 20°K) is investigated theoretically for the case when this scattering is accompanied by absorption or emission of one spin wave. The calculations are based on Kaplan's Hamiltonian (Phys. Rev. 124, 329, 1961) which takes anisotropy into account; only the anisotropy in the basal plane is neglected. Formulas are derived for the differential scattering cross sections for the case of a single-domain scatterer. A formula is obtained also for neutron polarization after scattering.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad); Fiziko-tekhnicheskiy institut AN USSR Kiyev (Physicotechnical Institute AS UkrSSR Kiyev)

Card 1/2

Inelastic scattering of slow... S/181/63/005/004/034/047
B102/B186

SUBMITTED: August 2, 1962 (initially)
December 1, 1962 (after revision)

Card 2/2

MALEYEV, S.V.

Using the resonance capture of neutrons in studying the vibration spectra of impurity atoms in crystals. Fiz. tver. tela 6 no.9:2717-2722 S '64.

(MIRA 17:11)

1. Fiziko-tekhnicheskiy institut imeni A.F. Ioffe AN SSSR, Leningrad.

L 12048-66 EWT(m)/EPF(n)-2/EWA(h)
ACC NR: AP6002657 SOURCE CODE: UR/0386/65/002/012/0545/0548

AUTHOR: Maleyev, S. V.

ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences SSSR (Fiziko-tekhnicheskiy institut Akademii nauk SSSR)

TITLE: Scattering of polarized neutrons in magnets near the phase-transition point

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 12, 1965, 545-548

TOPIC TAGS: neutron scattering, neutron polarization, phase transition, Curie point

ABSTRACT: This is a companion to a paper by Drabkin et al. in the same issue (ZhETF Pis'ma v. 2, 541, 1965; Acc. 6002656), who investigated the scattering of neutrons in nickel at temperatures close to the Curie point, and deals with the information that can be derived from experiments of this kind. It is shown first that near the Curie temperature the scattering is independent of the magnetization state of the sample. Since in investigations of phase transitions the major part is played by scattering with low energy transfer and with momentum transfer that differs little from the reciprocal lattice vector τ multiplied by 2π, the polarization of the scattered protons contains practically no information on the scatterer if $\tau \neq 0$.

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L 12048-66

ACC NR: AP6002657

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When τ = 0 and in the region of very small ω, in which the energy dependence of the cross section is practically impossible, the situation is different. The realtion between the experimentally determined polarization and the scattering cross section then makes it possible to determine the temperatures at which the energy transfer becomes significant. It is noted that both the scattering considered in this article and nuclear scattering contribute to the observed cross section and polarization, as does also scattering by conduction electrons, which in this case can be quite large. The experimental data also yield information on the thermodynamic potential of a magnet. Author thanks G. M. Drabkin for a preprint of his paper. Orig. art. has: 6 formulas. 44 55

SUB CODE: 20/ SUBM DATE: 29Oct65/ ORIG REF: 004/ OTH REF: 001

Card 2/2

L 9611-66 EWT(d)/EWT(1)/T/EWA(m)-2 IJP(c) AT

ACC NR: AP5025376 SOURCE CODE: UR/0181/65/007/010/2990/2994

44,55

AUTHOR: Maleyev, S. V.

44,55

ORG: Physicotechnical Institute im. A. F. Ioffe, Leningrad (Fiziko-tekhnicheskiy institut)

62

B

TITLE: Three-dimensional generalization of the Kronig-Penney model

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 2990-2994

TOPIC TAGS: particle physics, theoretic physics, Kronig Penney model, nuclear model, crystal lattice, energy theory, Green function, wave function

ABSTRACT: The Goldberger-Seitz dispersion equation for the Kronig-Penney model is considered. The motion of an electron is studied in a field of point centers of force which form a three-dimensional crystal lattice and are characterized by a single parameter--the scattering amplitude. It is found that an exact expression may be given in this type of system for the wave function and the Green function, and also that an exact dispersion equation may be derived for the energy as a function of the wave vector. The properties of the solutions for this equation are discussed and it is shown that in one of the limiting cases the expression for the energy coincides with that derived in the strong bond approximation.

SUB CODE: 20/ SUBM DATE: 28Apr65/ ORIG REF: 001/ OTH REF: 002

Card 1/1

L 10584-66 EWT(m)/EPF(n)-2/EWA(h)

ACC NR: AP5025387 SOURCE CODE: UR/0181/65/007/010/3063/3069

AUTHOR: Ginzburg, S. L.; Maleyev, S. V. 44,55 44,55

ORG: Physicotechnical Institute im. A. F. Ioffe AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR) 44,55

41 B

TITLE: Some polarization effects during neutron scattering in solids 19,55,44

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3063-3069

TOPIC TAGS: theoretic physics, neutron cross section, neutron scattering, neutron polarization, solid state physics

ABSTRACT: The authors discuss polarization effects which occur when neutrons are scattered by impurities and by conduction electrons in metals. It is shown that polarization of neutrons scattered in a given direction may be determ'ned as a function of the energy of the scattered neutrons to isolate from the experimental data the contribution due to scattering by impurities in the case where the impurity is an atom with nuclear spin or a paramagnetic atom. Approximate formulas which are true at small scattering angles are derived for the cross section and polarization of scattered neutrons in the case of scattering by conduction electrons. It is shown that the polarization of the scattered neutrons is strongly dependent on the mutual orientation of the incident beam, the polarization vector of the incident

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L 10584-66

ACC NR: AP5025387

neutrons and the scattering plane. In conclusion, the authors thank G. M. Drabkin for calling their attention to the problem of polarization effects during scattering of neutrons by electrons and for his frequent discussions with them of problems encountered in the work. Orig. art. has: 1 figure, 23 formulas.

SUB CODE: 20/ SUBM DATE: 13May65/ ORIG REF: 007/ OTH REF: 004

Card 2/2

L 61065-65 EWT(n)-2/EWA(h)/EWT(m) Pu-4
ACCESSION NR: AP5013906 UR/0056/65/048/005/1448/1458

AUTHOR: Maleyev, S. V.

19 24 16 B

TITLE: Inelastic small-angle scattering of neutrons in ferromagnets

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 5, 1965, 1448-1458

TOPIC TAGS: neutron scattering, small angle scattering, ferromagnet, slow neutron, spin wave dispersion, neutron polarization

ABSTRACT: The author considers small-angle inelastic scattering of slow neutrons in a ferromagnet, in the case when the change in the neutron energy during the scattering is comparable with the energy of the magnetic interaction of the atomic spins

in a ferromagnet, in the case when the change in the neutron energy during the scat-tering is comparable with the energy of the magnetic interaction of the atomic spins with one another and with the external magnetic field. The analysis is confined to the cases when the magnetic field is either parallel or perpendicular to the in-cident beam. It is shown that in this case the dispersion can no longer be assumed quadratic, and that the general expression must be used for the dispersion. It turns out that scattering with absorption of a spin wave occurs in a wider range of angles than scattering with emission of a spin wave. In the range of angles where only scattering with absorption takes place, the cross section should be strongly dependent on the neutron polarization in some cases, and if the incident neutrons

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L 61065-65
ACCESSION NR: AP5013906

8

are unpolarized, considerable polarization must result from the scattering. If the neutrons are sufficiently slow, there can be no neutron scattering accompanied by absorption or emission of a single spin wave. Some recent experiments on small angle scattering in ferromagnets are discussed. "The author thanks G. M. Drabkin, Ye. I. Zabidarov, Ya. A. Kayeman, A. I. Okorokov, and V. A. Trunov for many interesting discussions, and A. Klochikhin and A. D. Piliya with whom many problems touched upon in the article were discussed." Orig. art. has: 31 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences SSSR)

SUBMITTED: 14Dec64 ENCL: 00 SUB CODE: EM, NP

NR REF SOV: 006 OTHER: 003

Card 2/2

L 42300-66 EWT(1)/EWT(m) IJP(c) AT

ACC NR: AP6026676 SOURCE CODE: UR/0181/66/008/008/2320/2325

AUTHOR: Ginzburg, S. L.; Maleyev, S. V.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Scattering of slow neutrons in superconductors

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2320-2325

TOPIC TAGS: electron scattering, conduction electron, neutron scattering, slow neutron, superconducting material

ABSTRACT: The problem of the conduction-electron scattering of slow neutrons in superconductors is examined. It is shown that in a number of cases the scattering cross section can be several times greater than the electron scattering section in normal metal at the same temperature. Expressions are also derived for polarization of scattered neutrons. Unlike the cross section, polarization with scattering in superconductors differs little from polarization with scattering in normal metals. Using standard methods, the neutron-electron scattering cross section is presented in the following form:

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ACC NR: AP6026676

$$\left.\begin{aligned} \frac{d\sigma}{d\Omega dE'} &= \frac{e^2\gamma^2}{c^4}\frac{p'}{p}\frac{1}{q^2}K_{\alpha\beta}(q,\ \omega)(\delta_{\alpha\beta}-e_\alpha e_\beta), \\ K_{\alpha\beta}(\mathbf{q},\ \omega) &= \frac{V}{2\pi}\int\limits_{-\infty}^{\infty} dt d\mathbf{r} e^{i\omega t - i\mathbf{q}\mathbf{r}} \langle j_\alpha(\mathbf{r},\ t)\, j_\beta(0)\rangle. \end{aligned}\right\} \quad (1)$$

However, the authors emphasize that the detection of the effects in question are at the limit of present-day experimental possibilities, therefore it is reasonable to speak only about investigating the angular distribution of scattered neutrons but not about the quantity $\frac{d\sigma}{d\Omega dE'}$, especially in the latter case a presently unachieveable energy resolution (less than 1°) would be required. Therefore there is no sense in considering the possibilities of a detailed study of the electron spectrum in superconductors by means of neutrons. The authors thank G. M. Drabkin who called their attention to the problems examined in the article. Orig. art. has: 11 formulas.

SUB CODE: 20/ SUBM DATE: 04Dec65/ ORIG REF: 003

Card 2/2

ACC NR: AP7003238 SOURCE CODE: UR/0056/66/051/006/1940/1951

AUTHOR: Maleyev, S. V.

ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences, SSSR (Fiziko-tekhnicheskiy institut Akademii nauk SSSR)

TITLE: Electron scattering by an impurity with spin

SOURCE: Zh eksper i teor fiz, v. 51, no. 6, 1966, 1940-1951

TOPIC TAGS: electron scattering, impurity scattering, electron spin resonance, scattering amplitude

ABSTRACT: The author solves the problem of the scattering of an electron in a metal by an impurity with spin, at zero temperature, using a set of equations derived for a model problem in which an ideal Fermi gas interacts at zero temperature with a pointlike impurity. By examining the analytic and unitary properties of the scattering amplitude obtained in this case, the results are extended to obtain an expression for the scattering amplitude in the entire region near the Fermi surface. The series expansion of this solution in powers of the interaction, up to second power inclusive, coincides with the corresponding perturbation-theory series. The behavior of the amplitude as a function of the energy depends on the sign of the exchange part of the interaction. If this sign is negative, then the maximum cross section, equal to $4\pi k_F^{-2}$, is reached when $E = E_F$ (E_F - limiting Fermi energy). The behavior of the scattering phase shifts near the limiting Fermi energy has nothing in common with the

ACC NR: AP7003238

resonance described by the Breit-Wigner formula. If the exchange interaction is positive, then the cross section has a minimum at $E = E_F$. The applicability of the results to a real system of interacting electrons (Fermi liquid) is discussed in the conclusion. The author thanks I. Yassnevich and I. Ya. Korenblit for interesting him in this question, and Ya. I. Azimov, S. L. Ginzburg, V. N. Gribov, G. S. Danilov, and I. T. Dyatlov for valuable discussions. Orig. art. has: 1 figure and 42 formulas.

SUB CODE: 20/ SUBM DATE: 22Jul66/ ORIG REF: 004/ OTH REF: 010

Card 2/2

L 8703-65 EWT(1)/EEC(b)-2/T IJP(c)/ASD(a)-5/ESD(gs)/SSD/AS(mp)-2/RAEM(t)/BSD/
APGC(b)/ESD(t)/AFWL
ACCESSION NR: AP4044944 S/0181/64/006/009/2717/2722

AUTHOR: Maleyev, S. V.

TITLE: On the possible use of resonance neutron capture for the investigation of the vibration spectrum of impurity atoms in crystals vestigation of the ...

SOURCE: Fizika tverdogo tela, v. 6, no. 9, 1964, 2717-2722

TOPIC TAGS: neutron capture, resonance capture, vibration spectrum, absorption spectrum, neutron absorption, impurity center

ABSTRACT: A hypothetical experiment, involving considerable difficulty, is proposed for determining the oscillation spectrum of an impurity nucleus in a crystal from the energy and temperature dependence of the absorption cross section. This is done by adding a small amount of nuclei capable of resonance capture of neutrons

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L 8703-65
ACCESSION NR: AP4044944

with practically the entire absorption being effected by the impurity nuclei. Since the resonance energy lies in a region close to thernuclei. Since the resonance energy lies in a region close to thermal, it becomes possible to determine the oscillation spectrum from the energy dependence of the absorption cross section. The accuracy of such a method is estimated to be of the order of 10% at high frequencies. The method is not suitable for the determination of local frequencies, so that the impurity atom should be much heavier than the host atom. Particular interest would attach to heavy impurities in a host of vanadium, since the spectral distribution for vanadium is known from neutron experiments. "The author thanks I. M. Band, V. N. Guman, A. D. Piliya, and G. M. Eliashberg for a discussion of the problems touched upon in the paper." Orig. art. has: 13 formulas.

Card 2/3

L 8703-65
ACCESSION NR: AP4044944 0

SUBMITTED: 04Apr64 ENCL: 00

SUBMITTED: 04Apr64 ENCL: 00

SUB CODE: SS, NP NR REF SOV: 005 OTHER: 001

Card 3/3

1. FRANK-KAMENETSKIY, MALEYEV, T.P.

2. USSR (600)

4. Transcarpathia-Hydrocarbons

7. Curtisite form Transcarpathia. Dokl. AN SSSR 88 no. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

8(6) SOV/112-59-5-8597

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 5, p 28 (USSR)

AUTHOR: Maleyev, V. A.

TITLE: Experience With Automating the Turbine Equipment at the Shchekino Regional Electric Station

PERIODICAL: Sb. inform. materialov Mosenergo, 1957, Nr 14, pp 52-58

ABSTRACT: The following equipment is being automated: deaerators -- level and pressure controls; high-pressure reheater ROU -- tube break protection; feed-water and condensate pumps -- starting of reserve units; turbines -- steam feed to the end packings and condensate recirculation at low load. Only electro-mechanical controllers available at the station are used. The above automating measures will cut service personnel by 10-11 men per shift.

S.M.B.

Card 1/1

MALEYEV, V. F.

MALEYEV, V. F. Inzh. i MORGENSHTERN, N. V. Inzh., KHESIN, YU. D. St. Nauchn. Sotv.
Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta stroitel'nogo i dorozhnogo mashinostroyeniya

ZAMENA TSVETNYKH METALLOV V DETALYAKH STROITEL'NYKH I DOROZHNYKH MASHIN DREVESNYMI I TEKSTIL'NYMI PLASTIKAMI page 143

SO: Collection of Annotations of Scientific Research Work on Construction, completed in 1950,
Moscow, 1951

MALEYEV, V.P.

Late results of drainage therapy of acute burns of the esophagus caused by corrosive substances. Vrach.delo no.12:1313-1314 D '56. (MIRA 12:10)

1. Klinika bolezney ukha, gorla i nosa (zav. - prof.S.F.Letnik) Stalinskogo meditsinskogo instituta.
(BURNS AND SCALDS) (ESOPHAGUS)

MALEYEV, V.P.

DOLZHENKO, S.V., kandidat meditsinskikh nauk; MALEYEV, V.P., subordinator

Late results of using the drainage method in treatment of esophageal burns. Vest.oto-rin. 19 no.2:15-17 Mr-Ap '57. (MLRA 10:6)

1. Iz kliniki bolezney ukha, gorla i nosa (dir. - prof. S.F.Letnik) Stalinskogo meditsinskogo instituta.
(ESOPHAGUS, stenosis
caustic, tehr., drainage method, remote results (Rus))

Compilers: MALEYEV, V. P.; MURAV'YEV, O. A.; POBEDIMOVA, Ye. G.; POYARKOVA, A. I.; PROKHANOV, Ye. I.; SHISHKIN, B. K.; SHTEYNBERG, Ye. I.; YUZEPCHUK, S. V.; AFANAS'YEV, K. S.; BORISOVA, A. G.; VASIL'YEV, V. N.; GORSHKOVA, S. G.; ILIN, M. M.; KLOKOV, M. V.; KOMAROV, V. L. (Acad.); Editors: SHISHKIN, B. K.; BOBROV, Ye. G.

Flora of the USSR, Vol 15, Moscow-Leningrad, 743 pp., 1950

Book W-22202, 7 Apr 52

GUBONINA, Z.P.; MALEYEV, V.P.; SMIRNOV, P.A.; STANKOV, S.S.

Report on pollen species of the genus Tilia L. which occur in the U.S.S.R.
Trudy Inst.geog. no.52:104-126 '52. (MLRA 7:1)
(Pollen, Fossil)

MALEYEV, V. P.

IKONNIKOV, S.S.; ISMAILOV, M.; KNORRING, I.G.; KOROLEVA, A.S.; KUDRYASHEV, S.N.; MALEYEV, V.P.; MASLENNIKOVA, T.I.; NEVSKIY, S.A.; NIKITIN, V.A.; OVCHINNIKOV, P.N.; PLESHKO, S.I.; POPOV, N.G.; SIDORENKO, G.T.; CHUKAVINA, A.P.; SHIBKOVA, I.F.; BORISOVA, A.G., redaktor; VASIL'CHENKO, I.T., redaktor; NEUSTRUYEVA, O.E., redaktor; ZENDEL', R.Ye., tekhnicheskiy redaktor

[Flora of the Tajik S.S.R.] Flora Tadzhikskoi SSR. Moskva, Izd-vo Akad.nauk SSSR. Vol.1. [Pteridophyta - Gramineae] Paporotnikoobraznye-zlaki. Glav.red. P.N.Ovchinnikov. 1957. 547 p. (MIRA 10:9)
(Tajikistan--Botany)

39253

S/141/62/005/002/015/025
E192/E382

9.4210

AUTHOR: Maleyev, V.Ya.

TITLE: The scattering equation of a magnetron

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v. 5, no. 2, 1962, 333 - 342

TEXT: The interaction of a flat electron beam with the azimuthal E-wave in a cylindrical magnetron is analyzed. A polar coordinate system φ, r, z is assumed so that the only field components to be considered are E_φ, E_r and H_z. The analysis is based on the Maxwell equations and the equations of motion in their hydrodynamic form. First, the steady-state conditions are considered and the Brillouin-type solution of the equations of motion is given, which shows that the radius r_o of the limiting surface between the beam and the vacuum is expressed by: 4

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E192/E382

The scattering equation ....

$$r_o^2 \left\{ \left(1 - \frac{r_K^4}{r_o^4} \right) \ln \frac{r_o}{r_a} - \frac{1}{2} \left(1 - \frac{r_K^2}{r_o^2} \right)^2 \right\} = \frac{4mc^2V}{eH_o^2} \quad (13)$$

4

where H_o is the applied uniform magnetic field,
V is the applied voltage,
r_K is the radius of the cathode and
r_a is the radius of the anode.

The solution of the basic equations is then assumed to be in the form of steady-state values and a sinusoidal component. It is shown that also in this case the distribution of the radial field in the presence of electrons in the vicinity of the point $r = r_o$ is similar to that of a "cold" system. However, in the presence of the alternating field the limiting boundary between the electron beam and the vacuum undergoes a perturbation so that it is possible to determine the electron admittance at the boundary of the space

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S/141/62/005/002/015/025
E192/E382

The scattering equation ....

charge. The scattering equation of the system is obtained by solving the Maxwell equations and taking into account the boundary conditions at the anode surface. The resulting equation is in the form:

$$(\gamma\omega_s - \omega)^2 \zeta(\omega, \gamma) = \frac{1}{2}\,\omega_p^2 \left[\zeta(\omega, \gamma) - 1\right] \qquad (39)$$

4

where ω_p is the plasma frequency,

ω_s is defined by:

$$\omega_s(r) = \omega_L\left(1 - \frac{r_K^2}{r^2}\right); \quad \omega_L = \frac{eH_o}{2mc} \qquad (11),$$

γ is the propagation constant for the wave along the surface of the anode, and

ζ is given by:

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E192/E382

$$\zeta = \frac{\gamma - kr_a X}{\gamma + kr_a X} \left(\frac{r_a}{r_o} \right)^{2\gamma}$$

4

where X is the reactance at the anode surface having a radius r_a. Eq. (39) can be used to investigate the operation of a surface-wave magnetron and other devices of M-type, where the electron beam moves at constant angular velocity and has a constant density. However, the equation cannot be applied to the case of a flat magnetron, where $r \to \infty$. The author expresses his gratitude to E.A. Kaner, V.M. Kontorovich, G.Ya. Levin and I.D. Truten for their interest in this work and valuable advice and to A.V. Gaponov for useful discussion.

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR (Institute of Radiophysics and Electronics of the AS UkrSSR)

SUBMITTED: January 19, 1961

MALEYEV, V.Ya.

Synthesis of a nonhomogeneous line using continuous fractions.
Radiotekh. i elektron. 7 no.10:1829-1831 O'62. (MIRA 15:10)
(Electric networks) (Radio lines)

MALEYEV, V.Ya.; TODOROV, I.N.

Principal possibility for determining nucleotide sequence in polynucleotide according to its vibration spectrum. Biofizika 10 no.2: 221-225 '65. (MIRA 18:7)

1. Institut radiofiziki i elektroniki AN UkrSSR, Khar'kov.

MALEYEV, V.Ya.

Torsional vibrations of bases in nucleic acids. Biofizika 10 no.5:729-734 '65. (MIRA 18:10)

1. Institut radiofiziki i elektroniki AN UkrSSR, Khar'kov.

L 13964-66 EWA(j)/EWT(m)/EWA(b)-2 GS/JXT/RM
ACC NR: AT6003456 SOURCE CODE: UR/0000/65/000/000/0083/0093

AUTHOR: Maleyev, V. Ya.; Todorov, I. N.; Kashpur, V. A.

ORG: none

48
B+1

TITLE: An electrical analog for associated vibrations in nucleic acid and the problem of determining the nucleotide sequence

SOURCE: AN UkrSSR. Issledovaniya po bionike (Research in bionics). Kiev, Naukova dumka, 1965, 83-93

TOPIC TAGS: nucleic acid, electric analog, bionics, polymer, vibration spectrum

ABSTRACT: The authors consider the theoretical possibility of determining the nucleotide sequence in a nucleic acid from its vibrational spectrum. A mechanical model of a polynucleotide is proposed as a first approximation in which the polymer is linear with the least rigid bonds between the separate monomers (nucleotides). This model reflects several of the properties of the primary structure in nucleic acids. Associated vibrations are analyzed in a linear chain of n rigid nucleotides with masses $M, m_1, \ldots, m_{n-1}$ connected by uniform elastic threads of rigidity k.

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2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810003-4"

L 13964-66
ACC NR: AT6003456

Longitudinal oscillations are considered in which the displacement vectors of all masses are parallel to the axis of the molecule. The frequencies of oscillations in this system are assumed to be known and an electrical analog of the model is used as a basis for demonstrating how these data may be used for determining the order of the monomer sequence. The proposed method is illustrated by application to an electrical polymer model consisting of a nonuniform LC ladder network. The results show complete agreement in every case with the known sequence of monomers in nucleic acid chains. Orig. art. has: 2 figures, 3 tables, 22 formulas.

SUB CODE: 06,09/ SUBM DATE: 25Aug65/ ORIG REF: 005/ OTH REF: 005

Card 2/2

MALEYEV, Ye. A.

"Morphologic-Functional Analysis of the Occipital Region of the Cranium and Cervical Vertebrae in Vertebrates." Thesis of degree of Cand. Biological Sci. Sub 2 Nov 50, Moscow Oblast Pedagogical Inst.

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and in Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810003-4"

MALEYEV, Ye. A.

Dinosauria - Mongolia

Some observations on the geological age and stratigraphic distribution of the armored dinosaurs of Mongolia. Dokl. AN SSSR, 85, No. 4, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

MALEYEV, YE. A.

Mongolia - Dinosauria

Some observations on the geological age and stratigraphic distrivtion of the armored dinosaurs of Mongolia. Dokl. AN SSSR 85 no. 5, 1952.

MONTHLY LIST OF RUSSIAN ACCESSIONS. Library of Congress, November 1952. UNCLASSIFIED.

1. MALEYEV, Ye. A.

2. USSR (600)

4. Mongolia - Dinosauria

7. New family of armored dinosaurs from upper Cretaceous formation in Mongolia. Dokl. AN SSSR. 87, no. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810003-4"

1. MALEYEV, Ye. A.

2. USSR (600)

4. Dinosuria--Mongolia

7. New Ankylosaurus of the Upper Cretaceous strata in Mongolia. Dokl. AN SSSR 87 no. 2 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

1. MALEYEV, YE. A.

2. USSR (600)

4. Dinasauria

7. Discoveries of new armor-clad dinosaurs in Mongolia. Priroda, 42, no. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

USSR/ Geology - Paleontology

Card 1/1 Pub. 86 - 24/40

Authors : Maleyev, E. A. Cand. of Biolog. Sc.

Title : A new tortoise-like lizard in Mongolia

Periodical : Priroda 3, 106-108, Mar 1954

Abstract : Paleontological data are presented on a certain kind of dinosaur (Therizinosaurus), remains of which were discovered in 1948 in Mongolia. Illustrations.

Institution : Academy of Sciences USSR, Paleontological Institute

Submitted : ....

MALEYEV, Ye.A.

Armored dinosaurs of the Upper Cretaceous deposits of Mongolia (family Syrmosauridae). Trudy Paleont.inst. 48:142-170 '54. (MIRA 8:5)
(Mongolia--Dinosauria)

MALEYEV Ye. A

USSR/Geology - Paleontology

Card 1/1 Pub. 86 - 23/36

Authors : Maleyev, Ye. A., Cand. Biol. Sc.

Title : Carnivorous dinosaurs of Mongolia

Periodical : Priroda 44/6, 112 - 115, Jun 1955

Abstract : A discussion is presented of the general subject of paleontology with special reference to animals of the dinosaur type. The work of Soviet scientists in collecting specimens from Mongolia is recounted. These comprised some of the largest, as well as the smallest dinosaurs and birds. Illustrations.

Institution : ..... Paleontology Inst, AS USSR

Submitted : .....

MALEYEV, Ye.A.

Giant predatory dinosaurs found in Mongolia. Dokl. AN SSSR 104 no.4:634-637 O '55. (MLRA 9:2)

1. Paleontologicheskiy institut Akademii nauk SSSR. Predstavleno akademikom Ye.N.Pavlovskim.
(Gobi--Dinosauria)

MALEYEV, Ye.A.

Armored dinosaurs of upper Cretaceous deposits of Mongolia.
Trudy Paleont.inst. 62:51-91 '56. (MLRA 9:10)

(Mongolia--Dinosauria)

MALEYEV, Ye.A., kand.biolog.nauk; DAREVSKIY, I.S., kand.biolog.nauk

"Dragons" of Komodo Island. Priroda 52 no.3:24-35 '63. (MIRA 16:4)

1. Paleontologicheskiy institut AN SSSR, Moskva (for Maleyev).
2. Zoologicheskiy institut AN SSSR, Leningrad (for Darevskiy).
(Komodo Island--Lizards)

MALEYYEV, Ye.A.

Brain of carnivorous dinosaurs. Paleont. zhur. no.2:141-143 '65.

1. Paleontologicheskiy institut AN SSSR. (MIRA 18:6)

MALEYEV, Ye. F.

"Three Types of Lakes in the Amur River Valley," Priroda, No. 6, 19[illegible].

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810003-4"

MALEYEV, Ye.F.

Origin of Amur Province kaolin. Sov.geol. no.26:115-120 '47.
(Amur Province--Kaolin) (MLRA 8:8)

[illegible], Ye. F.

[illegible]aleyev, Ye. F. "On the [illegible]roblem of the extraction of bleachin[illegible] cl[illegible]ys from the [illegible] deposit in Zakarpat[illegible]," [illegible]ineral. [illegible]bornik, [illegible]. 2. 1[illegible], p. 1[illegible]3-[illegible]

[illegible]-3850, [illegible]6 June 53, [illegible], [illegible], 1[illegible].

MELEYEV, Ye. F.

"Some tertiary Transcarpathian volcanoes",
Priroda, No. 8, 1949

MALEYEV, YE. F.

"Bombs from Ancient Volcanoes of the Amur-Ussuri Plains,"

SO: Priroda, No. 12, 1949.

MALEYEV, YE. F.

11-8-8/14

AUTHOR: Maleyev, Ye.F.

TITLE: On the Suyfun Series and Age of Basalts in South Primor'ye (O suyfuyskoy svite i vozraste bazal'tov Yuzhnogo Primor'ya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, 1957, # 8, p 86-92 (USSR)

ABSTRACT: The author investigated tuffaceous rocks of the Suyfun series and basalts in South Primor'ye and arrived at the following conclusions:
1. The Suyfun series cannot be divided into two series of different age, conglomerate and tuffaceous rocks, as it was suggested by P.N. Kropotkin (Ref. 3), as the sedimentation of conglomerate proceeded simultaneously with the accumulation of tuffaceous material in different parts of the basin.
2. The Suyfun series is a composite complex of sedimentary and tuffaceous rocks. These rocks decrease in thickness and coarseness with the distance from the centers of eruption. In the remotest parts of the Suyfun series tuffaceous rocks taper, and this series becomes of arenaceous-conglomerate composition.
3. The earliest eruptions of basalts are of an age not older than the Lower Pliocene. The upper age limit for these

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basalts has not as yet been established.
The article contains 1 figure, 3 tables and 5 Slavic references.

ASSOCIATION: USSR Ministry of Geology and Mineral Resources Protection, Ukrainian Geological Administration (Ministerstvo geologii i okhrany nedr SSSR, Ukrainskoye geologicheskoye upravleniye), Kiyev

SUBMITTED: 12 June, 1956

Card 2/2

MALEYEV, Ye.F.

PHASE I BOOK EXPLOITATION 1021

Akademiya nauk SSSR. Dal'nevostochnyy filial

Prirodnyye sorbenty Dal'nego Vostoka (Natural Sorbents of the Far East) Moscow, Izd-vo AN SSSR, 1958. 127 p. (Series: Its: Trudy, seriya khimicheskaya, vyp. 3) 1,600 copies printed.

Resp. Ed.: Bykov, V.T., Professor; Ed. of Publishing House: Bankvitser, A.L.; Tech. Ed.: Prusakova, T.A.

PURPOSE: The present collection of articles is addressed to engineering and technical personnel of industrial, planning and managing bodies in Soviet industries, and members of scientific and educational institutions dealing with the problems of bleaching processes.

COVERAGE: The rapidly expanding industries of the Soviet Far East are continuously increasing their demands for various types of sorbents for processing and refining mineral and vegetable oils, animal fats, etc. The present collection of 13 articles describes the various types of natural sorbents extracted in the Soviet Far East, their

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physical-chemical and adsorptive properties, the history of their industrial exploitation, the geological formations in which they are found, the theory of their bleaching and refining action, the effect of weathering on their structure, and their uses in industry. The studies conducted by the authors indicate the presence of large quantities of high-quality natural sorbents in the Soviet Far East sufficient to satisfy local demands, thus eliminating the necessity of their import from other parts of the USSR.

TABLE OF CONTENTS:

Natural Sorbents of the Far East 1021

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Natural Sorbents of the Far East 1021

AVAILABLE: Library of Congress

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Card 4/4

MALEYEV, Ye.F.

Physicochemical properties of the decomposition products of ancient volcanic tuff in the Amur and Ussur Lowland. Trudy DVFAN SSSR. Ser. khim. no.3:41-55 '58. (MIRA 11:5)

(Amur Valley--Volcanic ash, tuff, etc.)
(Ussur Valley--Volcanic ash, tuff, etc.)

MALEYEV, Ye.F.

Tufaceous facies in the suifun series and the distribution of mineral resources in it. Trudy DVFAN SSSR. Ser. khim. no.3:56-64 '58.
(Maritime territory--Volcanic ash, tuff, etc.) (MIRA 11:5)

MALEYEV, Ye.F.

Recent tectonic movements in the Vygorlat-Huta zone. Geol. sbor. [Lvov] no.5/6:121-127 '58. (MIRA 12:10)

1. Ukrainskoye geologicheskoye upravleniye, Kiyev.
(Transcarpathia--Geology, Structural)

MALEYEV, Ye.F.

More on the classification of pyroclastic rocks. Zap. Vses. min. ob-va 87 no.1:120-125 '58. (MIRA 11:6)
(Volcanic ash, tuff, etc.)

SOV/11-59-2-11/14

AUTHOR: Maleyev, Ye.F.

TITLE: On the Tuff-Lavas and Ignimbrites (In Connection with the Publication of the Symposium "Tuff-Lavas") (O tufolavakh i ignimbritakh v svyazi s vykhodom sbornika "Tufolavy")

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geologicheskaya, 1959, Nr 2, p 123 (USSR)

ABSTRACT: This symposium was edited by the Laboratory of Volcanology of the AS USSR and contains articles by V.I. Vlodavets, V. P. Petrov, M.A. Favorskaya, I.M. Volovikova and B.L. Rybalov, all of which deal with the problem of tuff-lavas and ignimbrites. The author finds that the difference between these two rocks is not stressed enough. The tuff-lavas are volcanic rocks cemented together by lava, and the ignimbrites are pyroclastic rocks composed of caked together pieces of lava, glass and crystals.

Card 1/2

SOV/11-59-2-11/14

On the Tuff-Lavas and Ignimbrites (In Connection with the Publication of the Symposium "Tuff-Lavas")

ASSOCIATION: Laboratoriya vulkanologii AN SSSR (The Laboratory of Volcanology of the Academy of Sciences of the USSR)

Card 2/2

MALEYEV, Ye.F.

Basic principles for classifying pyroclastic rocks. Trudy Lab. vulk. no.17:183-190 '59. (MIRA 13:5)
(Volcanic ash, tuff, etc.)

MALEYEV, Ye.F.

Prospects for finding perlites in Transcaucasia. Razved.i okh.nedr 25 no.11:12-15 N '59. (MIRA 13:5)

1. Zakarpatskaya ekspeditsiya.
(Transcaucasia--Perlite (Mineral))

MALEYEV, Ye.F. (SSSR)

Basic characteristics of the geology of the Vygorlat-Gutinskiy Ridge. Mat.Karp.-Balk.assots. no.1:185-187 '60. (MIRA 14:12)
(Transcarpathia--Geology, Structural)

MALEYEV, Ye.F.

Mapping of faults in volcanic areas. Sov. geol. 3 no.10:141-143 O'60. (MIRA 13:10)

1. Laboratoriya vulkanologii AN SSSR.
(Faults (Geology)--Maps) (Volcanoes)

MALEYEV, Ye.F.

The Kuchava-Bystritsa volcano group in Transcarpathia. Trudy Lab. vulk no.18:103-107 '60. (MIRA 14:3)

(Transcarpathia—Volcanoes)

MALEYEV, Ye.F.

Recent data on the phases of volcanism in the Soviet Carpathians. Dokl.AN SSSR 133 no.5:1165-1168 Ag '60. (MIRA 13:8)

1. Laboratoriya vulkanologii Akademii nauk SSSR. Predstavleno akademikom D.S. Korzhinskim.
(Carpathian Mountains--Geology, Structural)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810003-4"

MALEYEV, Ye.F.

Pyroclastic nature of ignimbrites of southern Kamchatka.
Trudy Lab. vulk. no.20:97-101 '61. (MIRA 14:11)

1. Laboratoriya vulkanologii AN SSSR.
(Ozernaya region (Kamchatka)--Volcanic ash, tuff, etc.)

MALEYEV, Ye.F.

Some characteristics of andesite-basalt extrusions of the platform cycle of volcanism in Transcarpathia. Trudy Lab.vulk. no.21: 65-74 '62. (MIRA 15:4)
(Transcarpathia--Andesites) (Transcarpathia--Basalt)

MALEYEV, Ye.F.

New finds of igneous garnet in Transcarpathia. Izv. AN SSSR. Ser.geol. 27 no.7:28-34 Jl '62. (MIRA 15:6)

1. Laboratoriya vulkanologii AN SSSR, Moskva.
(Transcarpathia --Garnet)

MALEYEV, Ye.F.

Association of mineralization with volcanic formations in Transcarpathia. Dokl. AN SSSR 142 no.1:167-170 Ja '62.
(MIRA 14:12)

1. Laboratoriya vulkanologii AN SSSR. Predstavleno akademikom D.S. Korzhinskim.
(Transcarpathia--Ore deposits)

MALEYEV, Ye.F.

Relation between ore formation and volcanism in Transcarpathia.
Sov. geol. 6 no.1:82-96 Ja '63. (MIRA 16:6)

1. Institut vulkanologii Sibirskogo otdeleniya AN SSSR.
(Transcarpathia--Ore deposits)

MALEYEV, Ye.F.

Two-stage structure of the Vygorlat-Gutin volcanogenic ridge (Transcarpathia). Dokl. AN SSSR 148 no.5:1175-1178 F '63.
(MIRA 16:3)

1. Institut vulkanologii Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom A.L.Yanshinym.
(Transcarpathia—Rocks, Igneous)

MALEYEV, Ye.F.

Development of volcanicity types as exemplified by the Eastern Carpathians. Dokl. AN SSSR 148 no.6:1374-1377 F '63. (MIRA 16:3)

1. Institut vulkanologii Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom N.M.Strakhovym.

(Carpathian Mountains--Rocks, Igneous)

MALEYEV, Yevgeniy Fedotovich; RUDICH, K.N., red.; SMIRNOVA, Z.A., red.; SHMAKOVA, T.M., tekhn. red.

[Volcanoclastic rocks] Vulkanoklasticheskie gornye porody. Moskva, Gosgeoltekhizdat, 1963. 167 p. (MIRA 16:12)
(Volcanic ash, tuff, etc.)