

AZIMOV, S.A.; TESHABAYEV, K.T.; CHERNOVA, L.P.; CHERNOV, G.M.; CHUDAKOV,
V.M.

Angular distribution of shower particles in nuclear interactions
between fast nucleons and heavy nuclei in photographic emulsions.
Zhur. eksp. i teor. fiz. 39 no. 6:1534-1539 D '60. (MIRA 14:1)

1. Fiziko-tekhnicheskiy institut Akademii nauk Usberkskoy SSR i
Sredneaziatskiy gosudarstvennyy universitet.
(Cosmic rays) (Nuclear reactions)

CHUDAKOV, V. M., Cand. Phys-Math. Sci. (diss) "On Angular
Distribution of Shower Particles in Nuclear Interactions."

Tashkent, 1961, 13 pp (Acad. of Sci. Uzbek SSR, Phys.-Tech. Instit.)

175 copies (KL Supp 12-61, 254).

CHUDAKOV, V.M.

Azimuthal angular distribution of shower particles. Zhur. eksp.
i teor. fiz. 40 no.1:156-162 Ja '61. (MIRA 14:6)

1. Fiziko-tehnicheskiy institut AN Uzbekskoy SSR.
(Cosmic rays)

24.6700

39481
S/056/62/043/002/015/053
B102/B104

AUTHORS: Rechitskiy, I. V., Chudakov, V. M.
TITLE: Shape of the angular distribution of shower particles
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 45,
no. 2(8), 1962, 454-458

TEXT: It has been shown (Nuovo Cim. 18, 102, 1960; Phys. Rev. 122, 626, 1961) that in nuclear emulsions the distribution of secondary particles produced by nucleons of $> 10^{12}$ ev with respect to $x = \log \tan \theta$ is not normal in spite of the predictions of the hydrodynamic theory of head-on collisions; (θ is the angle between the direction of flight of the primary particle and that of emission of the secondary one in the laboratory system). The authors propose new criteria for investigating the angular distribution of secondary shower particles with any n_s (n_s = number of particles in the shower). If the distribution of the quantities x_i is normal, the random functions

Card 1/3

Shape of the angular distribution ...

S/056/62/043/002/015/053
B102/B104

$$d_1 = \sqrt{\frac{(n_s + 1)(n_s + 3)}{6(n_s - 2)}} g_1,$$

$$d_2 = \sqrt{\frac{(n_s + 1)^2(n_s + 3)(n_s + 5)}{24n_s(n_s - 2)(n_s - 3)}} \left[g_2 + \frac{6}{n_s + 1} \right], \quad (2)$$

with

$$g_1 = m_3 / \sqrt{m_2^3}, \quad g_2 = m_4 / m_2^2 - 3;$$

$$m_k = \frac{1}{n_s} \sum_{i=1}^{n_s} (x_i - \bar{x})^k, \quad \bar{x} = \frac{1}{n_s} \sum_{i=1}^{n_s} x_i. \quad (1)$$

can be formulated, whose expectation values are zero and the dispersion is unity, irrespective of the distribution parameters of x and of the number

of shower particles. The mean value $\bar{d}_k = \frac{1}{n} \sum_{i=1}^n d_{ki}$, $k = 1, 2$, can be

Card 2/3

Shape of the angular distribution ...

S/056/62/043/002/015/053
B102/B104

obtained experimentally. Expectation value and standard deviation of these quantities are given by $\nu(\bar{d}_k) = 0$ and $\sigma(\bar{d}_k) = 1/\sqrt{n}$, respectively. If one of the \bar{d}_k values is not within the range $-2/\sqrt{n} \leftrightarrow +2/\sqrt{n}$, the distribution of x will be abnormal, at least for a part of the shower. By applying the criterion to showers for primary-nucleon energies of $\sim 10^{11}$ ev it is shown that the distribution with respect to $x = \log \tan \theta$ is abnormal. It is in qualitative agreement with the two-center model of multiple production (A.A. Yemel'yanov, ZhETF, 42, 171, 1962). There are 2 figures and 1 table. ✓

ASSOCIATION: Fiziko-tehnicheskii institut Akademii nauk Uzbekskoy SSR
(Physicotechnical Institute of the Academy of Sciences
Uzbekskaya SSR)

SUBMITTED: March 30, 1962

Card 3/3

AZIMOV, S.A.; NIKISHIN, B.K.; CHERNOVA, L.P.; CHERNOV, G.M.; CHUDAKOV, V.M.

Azimuthal angular distribution of atmospheric shower particles.
Izv. AN Uz. SSR. Ser. fiz.-mat. nauk no.6:65-76 '61.

(MIRA 16:12)

1. Fiziko-tehnicheskiy institut AN UzSSR.
2. Chlen-korrespondent AN UzSSR (for Azimov).

L 13003-65 EWT(m)/EWP(t)/EWP(b) LJP(s) JD

ACCESSION NR: AR4046005

S/0058/64/000/007/D058/D058

SOURCE: Ref. zh. Fizika, Abs. 7D458

AUTHORS: Voronov, I. N.; Distler, G. I.; Chertkov, M. P.;
Chudakov, V. M. B

TITLE: Investigation of birefringence in silicon crystals by the method of infrared polariscopy

CITED SOURCE: Sb. Metod fotoelektr. infrakrasn. polyariskopii i defektoskopii poluprovodnik. materialov. M., 1962, 22-27

TOPIC TAGS: silicon, single crystal, double refraction, polariscope, dislocation study, ir measurement

TRANSLATION: Birefringence patterns were investigated of single crystals of n-type silicon grown by the Czochralski method in vacuum and in an argon or helium atmosphere. Plates cut perpendicular and parallel to the crystal growth axis were investigated. The birefringence patterns were obtained with the aid of a PK-1 scanning polariscope. The homogeneity of transmission of infrared radiation

Card 1/2

L 13003-65

ACCESSION NR: AR4046005

in the crystal plane, the dislocation density, and the minority carrier lifetime were also investigated. The values of the principal tangential stresses in the single crystal were investigated. A correlation is established between the values of the principal stresses in the crystal and the dislocation density or the minority carrier lifetime. The possibility of observing birefringence corresponding to screw-type impurity macro-inhomogeneity is demonstrated.

SUB CODE: SS, OP

ENCL: 00

Card 2/2

S/166/62/000/004/006/010
B112/B186

AUTHORS: Azimov, S. A., Chernova, L. P., Chernov, G. M.,
Chudakov, V. M.

TITLE: The nature of the interaction between fast nucleons and
heavy nuclei

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-
matematicheskikh nauk, no. 4, 1962, 47 - 51

TEXT: The authors studied experimentally the angular distribution (S-system) of secondary particles in showers produced by charged particles. They observed growth properties of the anisotropy σ which are qualitatively inconsistent with theoretical representations of the interaction between a nucleon and the flight-path "tube" of nuclear matter. If, however, the model of peripheral interactions is applied to rearrangement collisions of fast nucleons with heavy nuclei the increase of anisotropy in the S-system can be explained as due to an increased number of nucleus-target nucleons participating in the collision, as well as to the formation of a great number of ionized particles and the appearance of humps in shower particles. There is 1 figure.

Card 1/2

The nature of the interaction...

S/166/62/000/004/006/010
B112/B186

ASSOCIATION: Fiziko-tehnicheskiy institut AN UzSSR (Physico-technical
Institute AS UzSSR)

SUBMITTED: April 25, 1961

58
00
Card 2/2

RECHITSKIY, I.V.; CHUDAKOV, V.M.

Shape of the angular distribution of shower particles. Zhur. eksp.
i teor. fiz. 43 no.2:454-458 Ag '62. (MIRA 16:6)

1. Fiziko-tehnicheskiy institut AN Uzbekskoy SSR.
(Cosmic rays)

ABDUZHAMILOV, Sh.; AZIMOV, S.A.; CHERNOVA, L.P.; CHERNOV, G.M.; CHUDAKOV, V.M.

Azimuthal angular distribution of shower particles produced
by cosmic ray particles in a photographic emulsion. Zhur. eksp.
i teor. fiz. 45 no.3:407-414 S '63. (MIRA 16:10)

1. Institut yadernoy fiziki AN Uzbekskoy SSR.
(Photography, Particle track)
(Cosmic rays)

ACCESSION NR: AP4042364

S/0056/64/047/001/0024/0029

AUTHORS: Abduzhamilov, Sh.; Azimov, S. A.; Chernova, L. P.; Chernov, G. M.; Chudakov, V. M.

TITLE: Angular distributions of secondary particles in pN collisions at 24 BeV energy

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 1, 1964, 24-29

TOPIC TAGS: pion scattering, angular distribution, nucleon scattering, dispersion analysis, nuclear emulsion

ABSTRACT: The research was undertaken because asymmetric emission of particles was observed in nucleon-nucleon collisions at energies of several hundred BeV (V. V. Guseva et al., Izv. AN SSSR, Ser. fiz., v. 26, 549, 1962. N. A. Dobrotin et al., Nuclear physics v. 35, 152, 1962). The statistical method of dispersion analysis (the F test) is used to check the hypothesis of independent secondary-particle

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ACCESSION NR: AP4042364

emission angles in inelastic pN interactions involving primary protons of equal energy E and equal numbers n of charged secondary particles. The experimental values of F for pN interactions at 24 BeV and for 4--9 charged secondary particles conflict with this hypothesis and indicate nonuniformity of the angular distributions in the laboratory system. This nonuniformity cannot be accounted for by momentum conservation in knock-on collisions and is associated with the particle production mechanism in peripheral interactions. The efficiency of the F -test for determining nonuniform angular distribution in the laboratory system was checked by investigating the random stars obtained from a somewhat different model of NN interactions at 300 BeV, by obtaining the spectrum of meson cloud velocities in the center of mass system and the secondary-particle energy spectrum in the rest system of the meson cloud. An accelerated on-track scanning of plates bombarded with 24-BeV protons in the CERN accelerator has shown that for the stars observed in the emulsion the most values of F exceed unity, meaning that the emission angles of the secondary particles are not independent at least for some

2/3

ACCESSION NR: AP4042364

values of n . The nonuniformity of the angular distributions is similar to the asymmetric c.m.s. particle emission observed in NN collisions at $\sim 10^{11}$ eV. The peripheral interactions at E-24 BeV remains dominant up to a multiplicity $n = 9$. "The authors are grateful to W. O. Lock for collaborating in the acquisition of the photographic plates exposed in the CERN accelerator." Orig. art. has: 2 figures and 19 formulas.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Uzbekskoy SSR
(Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR)

SUBMITTED: 23Jan64

ENCL: 00

SUB CODE: NP

NR REF SOV: 003

OTHER: 001

3/3

L 13495-65 ENG(S)/EWI(S)/FIC/7

ACCESSION NR: AP4047895

S/0056/64/047/004/1273/1278

AUTHORS: Chernov, G. M.; Chudakov, V. M.

TITLE: Statistical analysis of angular distribution of shower particles

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 4, 1964, 1273-1278

TOPIC TAGS: cosmic ray shower, nuclear cascade, angular distribution, two center model

ABSTRACT: Inasmuch as the two-center model of multiple particle production cannot be regarded as definitely proved, the authors describe a new method for a quantitative testing of this model in connection with the angular distribution of shower particles. For this end, several methods are proposed for quantitative tests of various models of multiple production of particles in high energy NN collisions.

Card 1/3

L 13495-65

ACCESSION NR: AP4047895

sions. The method is based on the use of a uniform distribution for the secondary particles relative to a quantity y , defined by

$$y = \int_{-\infty}^{\infty} p(t, \gamma_1, \gamma_2, \alpha) dt,$$

regardless of the parameters γ_1 , γ_2 , and α (γ_1 , γ_2 -- Lorentz factors in the laboratory frame of the fast and slow centers, respectively; $\alpha = n_1 / (n_1 + n_2)$, where n_1 and n_2 are the numbers of charged particles emitted by these centers). The distribution parameters are estimated by the method of moments. The angular distribution of the secondary shower particles produced in a photographic emulsion by nucleons with energies exceeding 10^{12} eV is compared with the predictions of the usual two-center model and of the Hasegawa many-center model. It is concluded that the Hasegawa model does not agree with the experimental data. The authors thank E. G. Bubelev for a discussion of the work and for valuable remarks." Orig. art.

Card 2/3

L 13495-65

ACCESSION NR: AP4047895

has: 4 figures and 11 formulas.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Uzbekskoy SSR
(Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR)

SUBMITTED: 30Sep53

ENCL: 00

SUB CODE: NP, AA

NR REF SOV: 001

OTHER: 005

Card 3/3

L 34475-66 EWT(m)/T IJP(c)

ACC NR: AP6016812

(N)

SOURCE CODE: UR/0367/66/003/001/0112/0115

AUTHOR: Azimov, S. A.; Rasulkulov, M. S.; Chudakov, V. M.

ORG: Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR (Institut yadernoy fiziki Akademii nauk Uzbekskoy SSR)

TITLE: Azimuthal angular distribution of shower particles and gray tracks produced by cosmic ray particles in emulsion

SC 3: Yadernaya fizika, v. 3, no. 1, 1966, 112-115

TOPIC TAGS: cosmic shower, cosmic ray particle, angular distribution, cosmic ray anisotropy, ~~correlation statistics~~, PARTICLE TRACK

ABSTRACT: This is a continuation of earlier work by the authors group (ZhETF v. 45, 407, 1963) where a procedure was developed for observing different correlations in the azimuthal angular distribution. The present article is devoted to the azimuthal angular distribution of gray tracks of shower particles in stars produced in emulsion by singly charged particles, and satisfying the selection rules $n_h + n_g > 15$, $n_s \geq 10$ ($n_h + n_g$ - number of strongly ionized particles, n_s - number of shower particles). A gray track is defined as one with a grain density larger than $1.4\epsilon_0$ (ϵ_0 - grain density of fast-electron track) and a range larger than 2.5 mm, corresponding to a proton kinetic energy not lower than 25 Mev. The investigation covered 33 showers of ~50 Gev energy. The procedure involves introduction of specially defined random quantities, the mean values of which are determined separately for the shower.

Card 1/2

L 34475-66

ACC NR: AP6016812

4

particles and for the gray tracks. From the distribution of the showers relative to these random quantities, it is concluded that the shower particles as well as the gray tracks exhibit azimuthal asymmetry. Furthermore, there is a tendency for these two groups of particles to be emitted in opposite directions. The observed effects are qualitatively explained by using the concept of development of an intranuclear cascade. The authors thank I. M. Gramenitskiy for a discussion of the work, and Sh. Abduzhamilov, L. P. Chernova, and G. M. Chernov for measuring the shower-particle emission angles. Orig. art. has: 3 figures, 4 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 04May65/ ORIG REF: 003

Card 2/2 g.o.

L 45311-66 EWT(m)/T

ACC NR: AP6023083 (AN) SOURCE CODE: UR/0367/66/003/004/0657/0662

AUTHOR: Abduzhamilov, Sh. ; Azimov, S. A. ; Chernova, L. P. ; Chernov, G. M. ; Chudakov, V. M.

ORG: Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR (Institut yadernoy fiziki akademii nauk uzbekskoy SSR)

44
40
B

TITLE: Coherent interaction of high-energy protons with complex nuclei

19

SOURCE: Yadernaya fizika, v. 3, no. 4, 1966, 657-662

TOPIC TAGS: proton, high energy protin, photoemulsion, nucleon, particle interaction, proton interaction, inelastic interaction

ABSTRACT: The authors use a method proposed in a previous work [Sh. Abduzhamilov, S. A. Azimov, L. P. Chernova, G. M. Chernov, V. M. Chudakov ZhETF, 47, 24, 1964] to find and analyze in detail the differences between the angular distributions of secondary particles in showers formed by high-energy protons and satisfying the necessary selection criteria for pp and pn collisions in

Card 1/2

L 45314-66

ACC NR: AP6023083

4
photoemulsions. These differences are easily explained by the inclusion of coherent interactions. The method of research is also explained in detail. Experimental data are presented and discussed. The results are discussed of processing the showers formed in photoemulsions by protons with 24 gev and satisfying the necessary criteria of selection of pn collisions. Measurements have been made previously by the authors, the number of particles being $n \geq 4$. The differences found indicate the possible existence of coherent interactions of protons with complex nuclei among the showers with three and four secondary charged particles at 10 and 24 gev. The authors also used measurements made at the Laboratory of High Energies of the Joint Nuclear Research Institute (OIYa) during investigation of inelastic pn interactions of protons with an energy of 10 gev with free and quasi-free nucleons of the photoemulsion. The authors are grateful to V. I. Veksler for permission to use the experimental data obtained at the LVE OIYa, and to M. I. Podgoretskiy for discussions of the work. Orig. art. has: 2 figures, 15 formulas, and 1 table.

[GC]

SUB CODE: 20/ SUBM DATE: 12Mar65/ ORIG REF: 002/ OTH REF: 001/

Card 2/2 mjs

L 06499-67 EWT(m) JXT(CZ)

ACC NR: AP7000463

SOURCE CODE: UR/0367/66/004/001/0169/0177

AZIMOV, S. A.; NIKISHIN, B. K.; RECHITSKIY, I. V.; CHUDAKOV, V. M.

"Inelastic π -p Interactions¹⁹ with Slow Recoil Protons at 17 GeV"

27
B.

Moscow, Yadernaya Fizika; July, 1966; pp 169-177

ABSTRACT: π -p interactions with free and quasifree photoemulsion protons, in which 4 and 6 secondary charged particles are emitted, have been investigated. A method of analyzing the angular correlations and the distribution of residual effective masses is described which can prove useful in investigating multipion resonances. Experimental data indicate the possible existence of a resonance with the mass 3.2 GeV. The authors thank V. O. Lok for his kind assistance in the acquisition of photographic plates irradiated on the TsYERN accelerator; M. I. Podgoretskiy for discussion of the work and valuable advice; and T. V. Zagudaylo, A. G. Imanbayev, and Ye. A. Tsi', who participated in the review of the calculations. [Orig. art. has: 6 figures, 16 formulas, and 1 table. /Based on authors' Eng. abst./]

ORG: Institute of Nuclear Physics, AN UzSSR (Institut yadernoy fiziki AN UzSSR)

TOPIC TAGS: inelastic interaction, proton

SUB CODE: 20 / SUBM DATE: 09Aug65 / ORIG REF: 003 / OTH REF: 061

Cord 1/1 mRE

ACC NR: AT7002130

(A)

SOURCE CODE: UR/0000/66/000/000/0543/0548

AUTHOR: Grechushnikov, B. N.; Distler, G. I.; Chudakov, V. S.

ORG: none

TITLE: An infrared photoelectric optical method based on polarization.

SOURCE: Vsesoyuznaya konferentsiya po polarizatsionno-opticheskomu metodu issledovaniya napryazheniy. 5th, Leningrad, 1964. Polarizatsionno-opticheskiy metod issledovaniya napryazheniy (Polarizing-optical method of investigating stresses); trudy konferentsii. Leningrad, Izd-vo Leningr. univ., 1966, 543-548

TOPIC TAGS: IR scanning, optic analysis, optic scanning, IR analysis, IR system, elasticity

ABSTRACT: Application of IR to optical-electronic measurement of elastic deformations in opaque (to the visible spectrum) materials is described. The method consists in scanning of the sample by a narrow beam of infrared radiation, registering the transmitted radiation with an IR detector, converting the resultant electrical currents after amplification into visible light of varying intensity in a lamp, and recording this visible light on photographic film. The intensity of recorded light depends on the transmittance and birefringence of a given sample. In this manner elastic changes due to pressure in normally opaque materials, such as semiconductors, plastics, cer-

Card 1/3

ACC NR: AT7002130

tain types of glass, etc., can be investigated and recorded. The basic equipment, a polariscope, is shown in Figure 1. The wavelength of the IR radiation can be selected for best transmission through the given material. For kinematic studies of material deformation due to stress as a result of heat, another instrument was devised and is shown in Figure 2. In this instrument the intensity of radiation transmitted

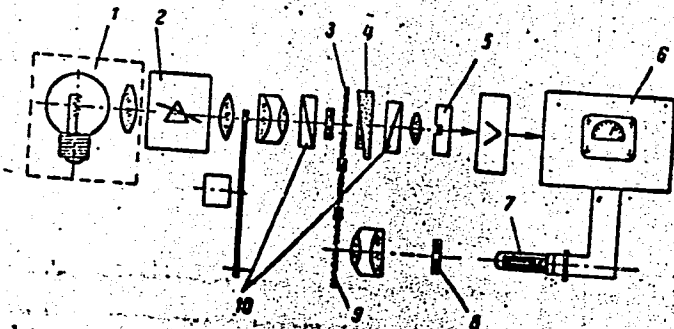


Fig. 1. PIK-1 Polariscope

1--light source; 2--monochromator; 3--sample; 4--wedge compensator; 5--IR detector;
6--amplifier; 7--neon lamp; 8--aperture; 9--photographic plate; 10--IR polarizers.

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ACC NR: AT7002130

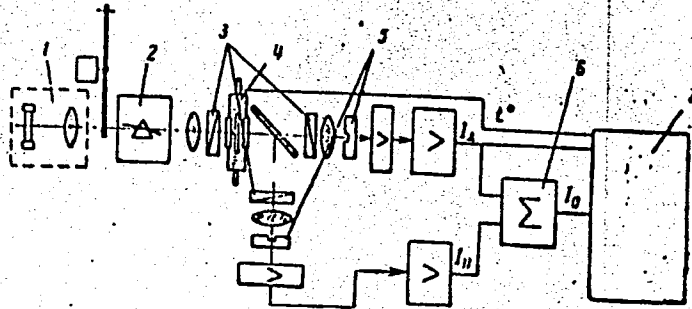


Fig. 2. 1--light source; 2--monochromator; 3--IR polarizers; 4--thermal chamber; 5--IR detectors; 6--summing amplifier; 7--multi-channel recording potentiometer.

through the sample (located in the thermal chamber) is recorded with respect to temperature variations. The authors report the results of some experiments carried out with these two instruments. Orig. art. has: 8 figures.

SUB CODE: 20,09,14/

SUBM DATE: 14Jun66/

ORIG REF: 005/

OTH REF: 001

Card 3/3

C. H. - УИРОУ, У. С.

KORCHAGIN, V.; CHUDAKOV, V.; ROVNYKH, A.; PLATONOV, V.; DENISOV, Yu.;
LYUBAKOV, V.; LEVASHOV, L.; GROYSMAN, E.; YUMATOV, V.; MOSIN, V.

Designing, constructing, flying. Tekn. mol. 26 no.3:31 '58.

(MIRA 11:3)

1. Predsedatel' soveta Osobogo konstruktorskogo byuro (for
Korchagin). 2. Chleny soveta Osobogo konstruktorskogo byuro (for
all except Korchagin).

(Airplanes--Design and construction)

CHUDAKOV, V.S.

Unhairing machine. Kozh.-obuv. prom. 5 no.11:14-16 N '63.
(MIRA 17:1)

ACCESSION NR: AR4044002

SOURCE: Ref. zh. Fizika, Abs. 6E365

S/0058/64/000/006/2048/2049

AUTHOR: Grechushnikov, B. N.; Distler, G. I.; Chudakov, V. S.

TITLE: The photoelectric method of investigating stresses and heterogeneities in semiconductor crystals

CITED SOURCE: Sb. Metod fotoelektr. infrakrasn. polariskopii i defektooskopii poluprovodnik. materialov. M., 1962, 6-15

TOPIC TAGS: photoelectric method, stress, heterogeneity, semiconductor crystal, IR polariscopy, flaw detection

TRANSLATION: There is developed a method of photoelectric infrared polariscopy and flaw detection, consisting in consecutive measurement, at individual points of semiconductor crystals, of values of transmission and birefringence that characterize their structural imperfections. The method also makes it possible to visually observe the pictures of transmission and birefringence distribution obtained in the infrared region of the spectrum. The apparatus used in this method

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ACCESSION NR: AR4044002

operates on the principle of scanning using high-sensitivity infrared-radiation receivers. To obtain quantitative data, the electrical signal generated in the infrared receiver is amplified and recorded by a measuring device. The electrical signal can also be converted into visible light. When using a microscope with this method it is possible to study various structural flaws. There have been designed and built instruments that operate using this method: the infrared polariscope PIK-1 and infrared polarization scanning microscope to investigate structural flaws in silicon and germanium crystals.

SUB CODE: SS, OP

ENGL: 00

Card 2/2

ACCESSION NR: AR4044004

S/0058/64/000/006/EO49/EO49

SOURCE: Ref. zh. Fizika, Abs. 6E368

AUTHOR: Distler, G. I.; Ry^{*}chkova, S. V.; Chernyak, T. Ye.; Chudakov, V. S.

TITLE: Use of the method of infrared polariscopy to study models of alloy junctions and the influence of mechanical processing on birefringence in Si crystals

CITED SOURCE: Sb. Metod fotoelektr. infrakrasn. polyariskopii i defektoskopii poluprovodnik. materialov. M., 1962, 16-21

TOPIC TAGS: IR polariscopy, alloy junction, silicon crystal, crystal, birefringence

TRANSLATION: Studies high-resistance n-type silicon single crystals grown by the Czochralaki method in a vacuum, and He with resistivity of 20-100 ohm-cm. Birefringence in crystals is studied by the method of photoelectric infrared polariscopy. It is found that during crystal growth there arise stressed regions near the lateral face; the stresses reach up to 63 kg/cm². For plates cut perpendicular to the axis of growth it is shown that stresses along the axis of the bar spread non-uniformly; maximum birefringence occurs at the ends of the bar. There were in-

Card 1/2

ACCESSION NR: AR4044004

vestigated plates cut at an angle to the growth axis. In this case, stresses in regions with maximum birefringence in these plates are considerably smaller in value and spread more uniformly.

SUB CODE: SS, OP

ENCL: OO

Card 2/2

ACCESSION NR: AR40467

S/0058/64/000/007/D058/D058

SOURCE: *Fizika*, Abs. 7D457

AUTHORS: Distler, G. I.; Korchazhkina, R. L./ Chudakov, V. S.

TITLE: Investigation of the dependence of birefringence in germanium single crystals on the growth conditions

CITED SOURCE: Sb. Metod fotoelektr. infrakrasn. polyariskopii i defektoskopii poluprovodnik. materialov. M., 1962, 28-35

TOPIC TAGS: crystal growth, germanium, single crystal, double refraction, dislocation study

TRANSLATION: A photoelectric scanning polariscope PIK-1 (wavelength 2.25μ) was used to study the dependence of birefringence patterns due to mechanical stresses on the thermal regimes of germanium crystal growth. The samples were cut perpendicular to the growth axis from crystals obtained by the Czochralski method, by zone melting, and by the tablet method. The obtained birefringence distributions

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ACCESSION NR: AR4046004

agree with the distributions in the dislocation density, determined from the etch figures. It is indicated that in technological investigations the method of birefringence study is less laborious than the method of dislocation study. V. Sintsov.

SUB CODE: SS, OP

ENCL: 00

Card 2/2

AP 5017342 ENT(1)/EED-2

1965/0181/481 2254-2256

Author: Gludakov, V. S.; Men', A. N.

TITLE: Calculation of the elastic binding coefficients and compressibility of spinels

Source: Fizika tverdogo tela, v. 7, no. 7, 1965, 2254-2256

TOPIC TAGS: crystallography, spinel structure, spectrum analysis, elastic modulus

ABSTRACT: Elastic constants and compressibilities of some ferrites were calculated from the frequency spectrum of a spinel-type linear series. The values of the frequencies were obtained by using data from the literature. An analysis of the experimental data showed that for isomorphous displacement of one of the cations, the low frequency band of the infrared spectrum changed slightly and this resulted in oscillations of the lighter oxygen atoms in the spinel lattice. Theoretical and experimental results for the frequencies of spinel-type linear series were tabulated for Fe3O4, NiFe2O4, CoFe2O4 and ZnFe2O4; along with the frequencies of the infrared spectrum, which were derived from the maximum and minimum frequencies of the infrared spectrum, the compressibility, 1/B, was calculated from the following formula:

$$\frac{1}{B} = \frac{2C_{33}}{9\alpha_0}$$

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L 62513-65

ACCESSION NR: AP5017342

where a_0 is the lattice parameter and

$$C_s = 12[\gamma - 4\gamma r_0 + 4(1 + \gamma)r_0^2], \quad \gamma = \frac{k_r}{k_0}, \quad r_0 = \frac{\gamma}{2(1 + \gamma)}$$

Values of $1/B$ for some of the spinels are given in table 1 of the Enclosure. Calculations for the approximate linear model gave two collective values for the elastic constants, and thus for the theoretical calculation of compressibility. Orig. art. has: 2 tables.

ASSOCIATION: Institut metallurgii, Sverdlovsk (Institute of Metallurgy)

SUBMITTED: 03Mar65

ENCL: 01

SUB CODE: MMSS

NO REF SOV: 001

OTHER: 003

Card 2/3

L 62513-65

ACCESSION NR: AP5017342

ENCLOSURE: 31 ○

TABLE I
Force constants k_T and k_0

Ferrite	$a_0, \text{Å}$	Theory ($10^5 d \cdot \text{cm}^{-1}$)				Experiment ($10^5 d \cdot \text{cm}^{-1}$)				Theory		$\frac{1}{\beta} \cdot 10^{12}$
		I		II		[1]		[2]		$\frac{1}{\beta} \cdot 10^{12} d \cdot \text{cm}^{-2}$		
		k_T	k_0	k_T	k_0	k_T	k_0	k_T	k_0	I	II	
NiFe ₂ O ₄	8.32	0.63	2.26	1.67	0.84	1.67	0.95	1.75	1.03	1.74	1.83	1.94
CoFe ₂ O ₄	8.36	0.52	2.27	1.69	0.69	1.66	0.85	1.70	0.92	1.38	1.56	1.79
ZnFe ₂ O ₄	8.42	0.42	2.17	1.72	0.53	1.48	0.92	1.29	1.03	1.14	1.39	

Card 3/3

L 11624-66 EWT(1)

ACC NR: AP5025303

SOURCE CODE: UR/0051/65/019/004/0586/0596

AUTHOR: Men', A.N.; Sokolov, A.V.; Zvezdina, N.A.; Kurushin, Yu. N.;
Nekoshnov, B.M.; Chudakov, V.S.

ORG: none

TITLE: Determination of the energy spectrum of an impurity ion with an unfilled d-shell in a crystal

SOURCE: Optika i spektroskopiya, v. 19, no. 4, 1965, 586-596

TOPIC TAGS: crystal impurity, EPR spectrum, line splitting

ABSTRACT: The interpretation of energy spectra and EPR spectra of ions in various crystals requires the solution of a secular equation which takes into account the configuration of the ion and the symmetry of the intracrystalline field. In this paper, tables of matrix elements have been compiled which make it possible to write a secular equation at once for any term of any configuration in the case of an impurity ion with an unfilled d shell. These tables can also be used in studying EPR spectra if the field of lower symmetry produces a splitting comparable in order of magnitude to other perturbations (spin-orbital and exchange perturbations, etc.). As an example, the splitting of the principal card 1/2

UDC: 539.184.2:548.0.001.1

45
B

L 11621-66
ACC NR: AP5025303

terms D and F in fields of variable symmetry was analyzed. Data on the optical spectra of Cr^{3+} in MgAl_2O_4 make it possible to determine local distortions caused by Cr^{3+} ion which replaces Al^{3+} ion at the octahedral sites of spinel. The data obtained are in good agreement with the experiment. Orig. art. has: 7 tables and 6 formulas.

SUB CODE: 20 / SUBM DATE: 28May64 / ORIG: 005 / OTH REF: 004

TS
card 2/2

BRAYNINA, D.Z.; MEN', A.N.; CHUDAKOV, V.S.; CHUFAROV, G.I.

Calculation of the "stabilization" energy of iron group ions in oxides having a spinel structure. Dokl. AN SSSR 160 no.2:379-382 Ja '65. (MIRA 18:2)

1. Institut metallurgii, Sverdlovsk. 2. Chlen-korrespondent AN SSSR (for Chufarov).

CHUDAKOV, V.S.

Unit for spray dyeing of leather. Kozh.-obuv. prom. 7 no. 9;
16-20 8 '65. (MIRA 18:9)

L 00943-66 EWT(1)/EWT(m)/T/EWP(t)/EEC(b)-2/EWP(k)/EWP(b), IJP(c) JD/GG

ACCESSION NR: AR5004725

S/0275/64/000/010/B009/B009
621.315.592:548.552:546.28

37
B

SOURCE: Ref. zh. Elektronika i yeye primeneniye. Svodnyy tom, Abs. 10B63

AUTHOR: Distler, G. I.; Rychkova, S. V.; Chernyak, T. Ye.; Chudakov, V. S.

TITLE: Using the method of infrared polariscopy for investigation of alloy-junction simulators, and the effect of machining on the birefringence of silicon crystals

21

CITED SOURCE: Sb. Metod fotoelektr. infrakrasn. polyariskopii i defekroskopii poluprovodnik. materialov. M., 1962, 16-21

TOPIC TAGS: pn junction, silicon crystal birefringence

TRANSLATION: Single n-Si crystals grown in vacuum and in He by the Chokhral'skiy method with a resistivity of 20--100 ohms-cm were studied. Simulators of p-n junctions were prepared by alloying Al-foil at 600C. The crystal birefringence was studied by the method of photoelectric IR-polariscopy. It was found that, during the crystal growing, stressed regions near the side surface arise, the stresses reaching 63 kg/cm². In the plates cut along (111), i. e., at right angles to the growth axis, the stresses along the ingot axis are distributed irregularly; the highest birefringence occurs at the ingot ends. Also plates cut along the (100) plane,
Card 1/2

L 00943-66

ACCESSION NR: AR5004725

i. e., at an angle to the growth axis were investigated. In this case, the stresses in the maximum-birefringence regions were much lower and distributed more uniformly than in the plates cut along (111). In the plates intended for devices the stresses were relieved in the process of cutting. In preparation of a p-n junction by the alloy method, a birefringence arises which corresponds to tangential stresses up to 70 kg/cm². Bibliography: 4 titles.

SUB CODE: SS

ENCL: 00

Card 2/2 DP

L 00932-66 EWT(1)/T/EEG(b)-2/EWA(h) IJP(c) GG/AT

ACCESSION NR: AR5004726

S/0275/64/000/010/B009B010

621.315.592:548.552.543.47

SOURCE: Ref. zh. Elektronika i yeye primeneniye. Svodnyy tom, Abs. 10B64

AUTHOR: Grechushnikov, B. N.; Distler, G. I.; Chudakov, V. S.

TITLE: Photoelectric method for investigating stresses and inhomogeneities in semiconductor crystals

CITED SOURCE: Sb. Metod. fotoelektr. infrakrasn. polyariskopii i defektoskopii poluprovodnik. materialov. M., 1962, 6-15

TOPIC TAGS: semiconductor crystal, structural defect, crystal defect

TRANSLATION: A method was developed of photoelectric IR-polariscopy and flaw detection which involves successive measurement of transmission and birefringence at separate points of a semiconductor crystal; this characterizes the structural defects of the crystal. The method also permits visual observation of the pattern of distribution and birefringence in the IR spectral region. The equipment involved operates on the principle of scanning a beam and uses high-sensitivity IR receivers. In order to obtain quantitative data, the electric signal of the IR

Card/2

L 00939-66

ACCESSION NR: AR5004726

receiver is amplified and recorded by an instrument. This electric signal can also be converted into visible light. In conjunction with a microscope, the method permits studying structural defects. These instruments operating according to the above method have been designed and built: IR-polariscope PIK-1 and IR-polarization microscope with a scanning device intended for studying structural defects in Si and Ge crystals.

SUB CODE: SS

ENCL: 00

Card 2/2 *SP*

AGOSHKOV, M.I.; CHUDAKOV, V.V., inzh.; PANFILOV, Ye.I., inzh.;
SIMAKOV, V.A., inzh.

[Establishing standards for operating expenses depending on the width of the stoping area in mining thin seams; report at the conference on problems of finding efficient methods of mining lode deposits held in Irkutsk, June 4-6, 1963] Normirovanie trudovykh zatrat v zavisimosti ot shiriny ochistnogo prostranstva pri razrabotke tonkikh zhil; doklad na soveshchani po voprosam izyskaniia effektivnykh sposobov razrabotki zhil'nykh mestorozhdenii v g. Irkutske (4-6 i iunia 1963 g.) Moskva, In-t gornogo dela im. A.A.Skochinskogo, 1963. 15 p. (MIRA 18:5)

NAZARCHIK, A.F., kand.tekhn.nauk; CHUDAKOV, V.V., gornyy inzhener

Features of breaking and shattering rock by blasting in a narrow stope. Vzryv. delo no.50/7:148-152 '62. (MIRA 15:9)

1. Institut gornogo dela imeni A.A. Skochinskogo.
(Blasting)

NAZARCHIK, A.F., kand. tekhn. nauk; CHUDAKOV, V.V., gornyy inzhener

Studying the stoping rate in developing vein deposits, Mauch.
soob. IGD 11:38-47 '61. (MIRA 16:4)

(Stoping(Mining))

AGOSHKOV, M.I.; SIMAKOV, V.A., kand. tekhn. nauk; CHUDAKOV, V.V., gornyy inzh.;
PANFILOV, Ye.I., gornyy inzh.

Reducing the working thickness is the principle task in improving
the mining of lode deposits. Gor. zhur. no.6:3-8 Je '64.

(MIRA 17:11)

1. Institut gornogo dela im. A.A. Skochinskogo. 2. Chlen-korrespondent
AN SSSR (for Agoshkov).

CHUDAKOV, Ye.A., akademik, otv. red.; KHRUSHCHOV, M.M., prof., otv.
red.; VOLAROVICH, M.P., prof., otv. red.; VELIKOVSKIY, D.S.,
red.; PERLYA, Z.N., red. izd-va; SIMKINA, Ye.N., tekhn. red.

[Friction and wear of machinery; proceedings] Trenie i iznos v
mashinakh; trudy. Moskva, Izd-vo Akad. nauk SSSR. Vol.2.[Reports]
Doklady. 1948. 599 p. (MIRA 15:7)

1. Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 2d.
(Lubrication and lubricants)

VOLODINA, A.S.; IVANOVA, Z.P.; CHUDAKOVA, A.P.; KUKANOVA, V.I.;
POPOV, N.V., red.; MILIKESOVA, I.F., tekhn. red.

[Album of wood-cutting instruments] Al'bom derevorezhushchego
instrumenta. Moskva, TSentr. in-t tekhn. informatsii i ekon.
issl. po lesnoi, bumazhnoi i derevoobrabatyvaiushchei promyshl.,
1962. 353 p. (MIRA 17:3)

1. Moscow. Nauchno-issledovatel'skiy institut derevoobrabaty-
vayushchego mashinostroyeniya.

CHUDAKOVA, G. A.

"The Effect of Analeptics on the Analgesic Action of Sedatives," a report presented at the 587th meeting of the Pharmacology and Toxicology Section, Leningrad Society of Physiologists, Biochemists, and Pharmacologists im. I. M. Sechenov, 28 Dec 54, Farm. i Toks. Ju-Aug. 55, pp. 60-63.

Chair of Pharmacology, 1st Leningrad Medical Inst.

Sum. 900, 26 Apr 56

ЧУДАКОВА, Г. А.

✓ Effects of analeptics on analgesic action of sedatives.
G. A. Chudakova (I. P. Pavlov 1st Med. Inst., Leningrad).
Farmakol. i Toksikol. 18, No. 4, 3-8 (1955).--Coramine and
strychnine enhance the analgesic action of morphine,
tecodine, lydol, promedol, and phenadone. Caffeine and
sometimes metrazole diminish analgesic action of the same
drugs. All 4 analeptics offset to some extent the depressing
action of the analgesics on respiratory centers; coramine is
most effective in this respect. Julia F. Smith

CHUDAKOVA, I.K.
1

CHUDAROVA, A.

CHUDAKOVA, I. K.

Composition and Properties of the High Molecular (Cont.) 647
Weight Fraction of Petroleum; Collection of Papers, Moscow, Izd-vo AN SSSR, 1958, 370pp
Chudakova, I.K., Volynskiy, N.P. Determination of Sulfur Content in Heavy
Petroleum Products by Double Combustion 352

This is a new method proposed for the double combustion for the determination of sulfur in all types of petroleum products, with the exception of gasoline and low-sulfur kerosene, and in individual organic compounds containing C, H, O, N, and S. This method is more exact than the bomb and VTI methods. There are 6 tables, 5 figures, and 5 references of which are 4 Soviet and 1 English.

Gurevich, I.L. On the Problem of Petroleum Desulfurization 364

The author describes the continuous desulfurization of crudes by means of the MNI adsorption method. Variation of the adsorbent - crude ratio controls the sulfur content of the various fractions. The article gives 3 figures. There are no references.

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*2nd. Collection of Papers, publ. by All Conf. Jan 56,
Moscow.*

СЛУЖБА КОВА, I. K.

11(0) **FRASE I BOKE EXPLANTACION** 809/1975

Analiza saha 8088, Khabirivki filial, etc
Estimulo energeticheskikh sredstvami, vodorazbivayemykh i neftnykh i
osobnoy (sterilnoy III nachoboy oseski) (Chemistry of Sulphur
Compounds Contained in Petroleum and Petroleum Products; Papers of the
Third Scientific Session). Moscow, Izd-vo AN SSSR, 1975. 576 p.
2,000 copies printed. Errors all inserted.
Bibliograf. Dred: R.P. Chelostov (Imp. Ek.) Dector of Chemical Sciences;
S.P. Gal'pern, Dector of Chemical Sciences; Ya. B. Chertkov, Dector of Tech'nal
Sciences; V.V. Ponor, Candidate of Technical Sciences; and V.P. Troshchenko,
Candidate of Chemical Sciences; St. of Publishing House: I.I. Krasnyi
Pusk. M., S.P. Polonoys.

FRASE: This book is intended for chemists, chemical engineers, and technicians specializing in the chemistry of petroleum.
CONTENTS: The book is a collection of papers presented at the Third Scientific Session on the Chemistry of Organic Sulphur and Nitrogen Compounds held in Moscow and Leningrad from June 3-8, 1975. The book consists of six sections: 1) Synthesis, characterization, and analysis of organic sulphur compounds; 2) Separation and purification of organic sulphur compounds contained in petroleum and petroleum products; 3) Determination of organic sulphur compounds by thermal catalysis; 4) Organic synthesis and tar formation in sulphur-containing petroleum and petroleum products; 5) Role of organic sulphur compounds and hydrogen sulfide; 6) Physiological properties of organic sulphur compounds. The personnel mentioned are mentioned. There are 315 references, of which 179 are in Russian, 110 in English, 5 in French, 12 in German, and 1 in Czech.

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Chelostov, R.P., E.M. Kordeyev, L.L. Shala. Purifying Standard Preparations of Organic Sulphur Compounds 20

Chelostov, R.P., R.D. Imshayeva. Determination of Sulfoxides in Petroleum Products With the Aid of Absorption Spectra in the Ultraviolet 30

Gal'pern, S.P., I.I. Chelostov, M.V. Yezhovskikh. Development of the Catalytic Oxidation Method Suitable for the Determination of Sulfoxide and Thiophenes in Organic Compounds, Petroleum, and Petroleum Products 37

Chelostov, R.P., L.L. Shala, V.A. Boylanov. Radiometric Method for Determination of the Total Sulphur Content in Petroleum Products 44

Cont 5/20

CHUDAKOVA, I. K., Cand Chem Sci (diss) -- "A method of quantitative determination of sulfur and halogens in organic substances". Moscow, 1960. 19 pp (Acad Sci USSR, Inst of Petroleum-Chem Synthesis), 150 copies (KL, No 14, 1960, 128)

CHUDAKOVA, I.K.; GAL'PERN, G.D., doktor khimicheskikh nauk; VOLYNSKIY,
N.P.

Micro- and semi-microdetermination of sulfur in organic compounds,
crude oils, and petroleum products. Metod.anal.org.soad.nefti,
ikh smes. i proizv. no.1:21-57 '60. (MIRA 14:8)
(Sulfur--Analysis) (Sulfur organic compounds)
(Petroleum products)

CHUDAKOVA, I.K.; GAL'PERN, G.D., doktor khimicheskikh nauk; VOLYNSKIY,
N.P.

Micro- and semi-microdetermination of chlorine, bromine, and iodine and simultaneous determination of sulfur and halogen (chlorine or bromine) from the same batch, in organic compounds and their mixtures. Metod. anal. org. soed. nefti, ikh smes. i proizv. no. 1:107-131 '60. (MIRA 14:8)
(Halogen compounds) (Sulfur--Analysis)

GAI-PERN, G.D.; CHUDAKOVA, I.K.; YEGORUSHKINA, M.V.

Direct microdetermination of oxygen in organic compounds.
Zhur. anal. khim. 19 no.5:598-606 '64. (MIRA 17:8)

1. Institut neftekhimicheskogo sinteza imeni A.V. Topchiyeva
AN SSSR, Moskva.

CHUDAKOVA, I.V.; BOCHAROVA-MESSNER, O.M.

Change in the functional and structural characteristics of the
wing muscles of the house cricket *Acheta domestica* L. in ontogeny.
Dokl. AN SSSR 164 no.2:469-472 S '65. (MIRA 18:9)

1. Institut morfologii zhitovnykh im. A.N. Severtsova AN SSSR.
Submitted October 30, 1964.

CHUDAKOVA, I.V.

Postembryonic changes in the functional characteristics of the
wing muscles of the Asiatic migratory locust. Dokl. AN SSSR
152 no.6:1490-1493 0 '63. (MIRA 16:11)

1. Institut morfologii zhivotnykh im. A.N. Severtsova AN SSSR.
Predstavleno akademikom V.N. Chernigovskim.

*

CHUDAKOVA, I.V.

After discharge in the neuromuscular apparatus of insects. Zhur.
ob.biol. 21 no.1:77-80 Ja-F '60. (MIRA 13:5)

1. Kafedra fiziologii zhivotnykh Moskovskogo gosudarstvennogo
universiteta imeni M.V. Lomonosova.
(NERVOUS SYSTEM--INSECTS)

CHUDAKOVA, I.V.

Analyzing the aftereffect mechanism of the neuromuscular apparatus
in insects. *Fiziol. zhur. SSSR* 46 no. 9:1044-1049 S. '60.

(MIRA 13:10)

1. From the Chair of Animal and Human Physiology, Lomonosov
State University, Moscow.

(INSECTS—PHYSIOLOGY) (NERVES) (MUSCLES)

CHUDAKOVA, I.V.

Dynamics of changes in the excitability of motor neurons of the thoracic ganglion in migratory locusts due to the stimulation of the brain. Dokl. AN SSSR 143 no.3:743-745 Mr '62. (MIRA 15:3)

1. Institut morfologii zhivotnykh im. A.N.Severtsova AN SSSR.
Predstavleno akademikom K.I.Skryabinym.
(Nervous system--Insects)

BUZNIKOV, G.A.; CHUDAKOVA, I.V.

Serotonin in developing embryos of the sea urchin *Strongylo-*
centrotus droëbachiensis. Dokl. AN SSSR 152 no.4:1014-1016 0 '63.
(MIRA 16:11)

1. Institut morfologii zhivotnykh im. A.N. Severtsova AN SSSR.
Predstavleno akademikom A.N. Bakulevym.

*

BUZNIKOV, G.A.; ZHEREBCHENKO, P.G.; CHUDAKOVA, I.V.

Effect of various indolylalkyl amines on the motor cells of mollusk embryos and the vessels of rabbit ear. *Biul. eksp. biol. i med.* 59-no. 5: 59-63-165. (MIRA 18:11)

1. Laboratoriya obshchey i sravnitel'noy fiziologii (zav. T.M. Turpayev) Instituta morfologii AN SSSR, Moskva. Submitted October 4, 1963.

CHUDAKOVA, I.V.; BUZNIKOV, G.A.

Probable participation of acetylcholine in early embryogeny of
Echinodermata. Zhur. evol. biokhim. i fiziol. 1 no. 6:557-563
N-D '65 (MIRA 19:1)

1. Laboratoriya obshchey i sravnitel'noy fiziologii imeni
Kh.S. Koshtoyantsa Instituta morfologii zhivotnykh imeni A.N. Se-
vertsova AN SSSR, Moskva. Submitted February 10, 1964.

L 22928-66 EWT(1)/EWA(h) CW

ACC NR: AP6013163

SOURCE CODE: UR/0387/66/000/004/0036/0044

AUTHOR: Khalevin, N. I.; Druzhinin, V. S.; Rybalka, V. M.; Nezolenova, E. A.; Chukdakova, L. N.ORG: Institute of Geophysics, Ural Branch, Academy of Sciences SSSR
(Institut geofiziki, Ural'skiy filial, Akademiya nauk SSSR)TITLE: Results of deep seismic sounding of the earth's crust in the central Urals

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 4, 1966, 36-44

TOPIC TAGS: deep seismic sounding, seismic profile, seismic discontinuity, deep drilling, Moho discontinuity

ABSTRACT: In 1962—1964 the Bizhenovsk Geophysical Expedition of the Ural Geological Administration of the Main Geological Administration of the RSFSR and the Institute of Geophysics of the Ural Branch of the Academy of Sciences SSSR carried out deep seismic soundings (GSZ) along a 450-km, east—west profile across the Urals between Krasnoufimsk on the west and Tyumen on the east. Both the GSZ and KMPV (longitudinal wave correlation) methods were used. In the GSZ operations, six shot points, spaced about 100 km apart with travel times of 300 km, were supplemented in the Asbest region by quarry explosions detonated

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UDC: 550.834:550.311

L 22928-66

ACC NR: AP6013163

simultaneously with the GSZ shots. Three shot points, spaced about 25 km apart with travel times of 50 km, were used in the KMPV operations. Instruments used in the KMPV method were SS-30/60 stations with SPEN-1 seismographs; the filtration was 2-2 for distances of less than 100 km, and 1-1 for longer distances. Seismographs were arrayed in groups of 3-4, 10-20 m apart with 100 m between the groups. Six main groups of reflected and refracted waves were distinguished (three discontinuities in the upper crust and three in the lower crust), the surfaces of the granite-gneiss basement and the Moho discontinuity being the best defined. Analysis of the seismographic data showed that the crust and upper mantle is layered, that the crust is characterized by a fault-block structure, and that the Moho discontinuity is downwarped under the Urals. The authors evaluate the data obtained in this study as being of great value in selecting the site for deep drilling in the Urals and recommend that additional profiles be run, especially in the Tagil'-Magnitogorsk area where an explanation for the 7000 m/sec velocity discovered in the present study at a depth of 5-6 km might be obtained. Orig. art. has: 3 figures.

[ER]

SUB CODE: 08/ SUBM DATE: 26Dec64/ ORIG REF: 009/ OTH REF: 001
ATD PRESS: 4237

Card 2/2 *AW*

CHUDAKOVA, M.A.

~~Roentgenotherapy of hypertension. Klin.med, Moskva 29 no.5:58-59~~
May 1951. (CML 20:9)

1. Of the Central Clinical Roentgen-Radiological Hospital
(Scientific Director--Prof. N.M. Nikolayev), Moscow.

LARIONOV, L.F.; CHUDAKOVA, M.A.

Use of sarcolysine with colchamine in cancer of the esophagus.
Vop. onk. 9 no.12:3-7 '63. (MIRA 17:12)

1. Iz Tsentral'noy klinicheskoy rentgeno-radiologicheskoy bol'nitsy Ministerstva putey soobshcheniya (ispolnyayushchiy obyazannosti nachal'nika - A.A. Sokolova). Adres avtorov: Moskva, D-367, Volokolamskoye shosse, 30. Institut eksperimental'noy i klinicheskoy onkologii AMN SSSR.

SAPIRO, M.M.; SIROTNIKOV, S.Z.; CHUDAKOVA, M.I.

Cleaning of hydrolyzers with alkalies. *Gidroliz i lesokhin*,
prom. 12 no.6:16-17 '59. (MIRA 13:2)

1. Leningradskiy gidroliznyy zavod (for Sapiro, Sirotnikov).
2. Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy i
sul'fitno-spirovoy promyshlennosti (for Chudakov).
(Hydrolysis)

CHUDAKOVA, N.

Device for cutting and drilling tiles. Na stroi. Mosk, 1 no. 5:28
M_y '58. (MIRA 11:8)

1. Nachal'nik mekhanisirovannogo uchastka tresta Mosotdelstroy
No. 4.

(Tiles)

CHUDAKOVA, N.I.

Device for cutting glazed and ceramic tiles. Suggested by N.I.
Chudakova. Rats. i izobr. predl. v stroi. no.8:91-94 '58.

(HIRA 13:3)

1. Nachal'nik mekhanizirovannogo prorabskogo uchastka tresta
Mosotdelstroy No.4.

(Tiles) (Cutting machines)

CHUDAKOVA, N.I.

Device for cutting tiles. Suggested by N.I. Chudakova. Rats.
predl. no. 37:12-14 '59. (MIRA 14:1)
(Cutting machines) (Tiles)

CHUDAKOVA, N.I.

Device for drilling holes in tiles. Suggested by N.I. Chudakova.
Rats. predl. no. 37:14-17 '59. (MIRA 14:1)
(Drilling and boring machinery) (Tiles)

MAYBORODA, V.I.; PANINA, L.D.; VANIFAT'YEVA, K.P.; NIKITINA, A.M.;
CHUDAKOVA, N.I.

Mass coloration of capron. Khim.volok. no.5:52-55 '62.
(MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut
iskusstvennogo volokna (for Mayboroda, Panina, Vanifat'yeva).
2. Klin'skiy kombinat iskusstvennogo i sinteticheskogo
volokna (for Nikitina, Chudakova).
(Dyes and dyeing--Nylon)

KHARITONOVA, G.N.; NIKITINA, A.M.; CHUDAKOVA, N.I.

Loose nylon dyeing. Khim. volok. no.2:61-62 '65.

(MIRA 18:6)

1. Klinsky kombinat.

MAKAROV, Yu.M.; KHARITONOVA, G.N.; CHUDAKOVA, N.I.

Changes in the properties of capron fibers during the process of manufacture. Khim. volok. no.3:62-65 '65. (MIRA 18:7)

1. Moskovskiy tekstil'nyy institut (for Makarov). 2. Klinskiy kombinat iskusstvennogo i sinteticheskogo volokna (for Kharitonova, Chudakova).

CHUDAKOVA, N.I.

Boom-out indicator for tower cranes. Suggested by N.I.Chukakova.
Rats.i izobr.predl.v stroi. no.16:67-68 '60. (MIRA 13:9)

1. Starshiy inzhener tresta Mosoblstroyemkhanizatsiya, Moskva, ul.
Chkalova, d.36

(Cranes, derricks, etc.)

FJNT, N.; LATYSHEV, V.; CHUDAKOVA, Ye, agronom; NAYDIN, P.G., professor.

Local placement of mineral fertilizers. Nauka i pered. op. v
sel'khoz. 6 no.11:80-82 N '56. (MIRA 10:1)

1. Glavnyy agronom Brynskoj mashinno-traktornoy stantsii (for Laty-
shev). (Fertilizers and manures)

BUROV, D.I., prof., doktor sel'skokhozyaystvennykh nauk; CHUDANOV, I.A.

Efficient utilization of perennial grasses in crop rotations.
Zemledelie 23 no.1:22-27 Ja '60. (MIRA 13:12)

1. Knybyshevskiy sel'skhozaystvennyy institut.
(Grasses) (Rotation of crops)

Yar. E., Liger, I. K.

The method for measuring resistance of

... energetiki...
... elektrotekhnike. 3. Upravlyaniye...
... elementy i ikh primeneniye (Semiconductor...
... engineering. 3. Controlled semiconductor rectifying elements and their

TOPIC TAGS: semiconductor, semiconductor resistance, semiconductor resistance measurement

ABSTRACT: The equipment involved, theory, and experimental results obtained with an impulse method of measuring the resistance of semiconductors are described. A pair of square impulses, one of each polarity, is amplified and applied to a cathode follower. The impulse repetition rate can be controlled; the impulse duration is 1 μ sec. The method promises accurate measurement of the semiconductor resistance if the shunting capacitance of the wiring is held within

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ACCESSION NR: AT5013582

certain limits (formula 7). The method also permits measuring (with an error of up to 25%) the resistance of a semiconductor when the latter presents a considerable capacitance. The method was also used for measuring small-size resistors (with electronic equipment) with good results. The method is applicable for resistors (with $R < 4 \text{ k}\Omega$) when the wiring capacitance was under 1 pF (by $5 \text{ k}\Omega$ resistors could be reliably measured when the wiring capacitance was 1 pF). The method was verified by measurements on various types of resistors and alloys. The statistical error of the measurements was 3% . The document contains 12 figures and 20 formulas.

ASSOCIATION: Rizhskiy politekhnicheskij institut (Riga Polytechnic Institute)

FORM NO: 00

ENCL: 00

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OTHER: 005

Card 2/2

CHUDAREK, M.

"Effect of ceramic-cutting tools in the design of machine tools." p. 432.

STROJIRENSTVI. (MINISTERSTVO TEZKEHO STROJIRENSTVI, MINISTERSTVO PRESNEHO STROJIRENSTVI A MINISTERSTVO AUTOMOBILOVEHO PRUMYSLU A ZEMEDELSKYCH STROJU.)
Praha, Czechoslovakia, Vol. 9, no. 6, June 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959.
Uncl.

BIRYUKOV, Nikolay Mikhaylovich; CHUDAREV, Pavel Fedorovich, dots.;
STARYKH, A.P., red. izd-va; ~~NOVIK, A.Ia., tekhn. red.~~

[Lectures in the course "Theoretical fundamentals of the
technology and processes of the manufacture of airplane
parts" for students in evening classes] Lektsii po kursu
"Teoreticheskie osnovy tekhnologii i protsessy izgotovle-
niia detalei samoletov" dlia studentov vechernego otdele-
niia. Moskva, Oborongiz, 1963. 175 p. (MIRA 16:9)
(Airplanes--Design and construction)

CHUDAROV, N.P.

Some advice on the maintenance of VI23 electric locomotives.
Elek. i topl. tiaga 3 no.3:32-34 Mr '59. (MIRA 12:5)

1. Nachal'nik tekhnicheskogo otdela lokomotivnogo depo Beleva, Tomskaya doroga.

(Electric locomotives--Maintenance and repair)

AZIMOV, S.A.; CHERNOV, G.M.; CHUDAKOV, V.M.

Analysing the angular distribution of shower particles in nuclear interactions. *Izv. AN Uz. SSR. Ser. fiz.-mat. nauk* no.3:16-23 '60.
(MIRA 13:8)

1. Fiziko-tekhnicheskiy institut AN UzSSR.
(Cosmic rays)

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S/056/61/040/001/017/037
B102/B204

24.6900

AUTHOR:

Chudakov, V. M.

TITLE:

The azimuthal angular distribution of shower particles

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40,
no. 1, 1961, 156-162

TEXT: An experimental verification of the two-center model of multiple particle production in collisions of fast nucleons by means of the angular distribution (with respect to the angle between the orbits of primary and secondary particles) is unfavorable, because the effect is mostly of the same order as the natural statistical oscillations. To confirm the utility of this model, the finding of an anisotropy of the azimuthal angular distribution of secondary particles appears to be better suited (insofar as it is not surpassed by statistical fluctuations). Theoretically, the azimuthal asymmetry of the angular distribution of fast particles produced in collisions between nucleons and complex nuclei has already been studied by means of the Pearson criterion, but no existence of an azimuthal asymmetry could be proven. This is, however, ascribed to the fact that, in order to be able

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to apply this criterion, a large number of secondary particles must exist. For the case in which only a small quantity of secondary particles exists, the author in the present paper shows that it is also possible, and more favorable, to apply the χ^2 -criterion for the finding of an azimuthal asymmetry of secondary particles. Here, the lack of particles in individual showers may be compensated by a large quantity of showers. To study the angular distribution, the total azimuthal angle 2π was decomposed into m equal integrals, and the number of particles (n_k) in each integral was

calculated ($\sum_{k=1}^m n_k = n_s$, the total quantity of secondary particles). If azimuthal isotropy and statistical independence of the departure angle φ_i of the secondary particles is assumed, one will find that in the case of large n_s , an χ^2 -distribution with $m-1$ degrees of freedom exists. Here, the mathematical expectation and dispersion of these quantities for arbitrary

n_s is calculated ($\lambda_m^2 = \frac{m}{n_s} \sum_{k=1}^m n_k^2 - n_s$). For this purpose, the quantity

$\alpha_m = \lambda_m^2 / (m-1)$ is introduced, and using the Chebyshev inequality and the

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theorem by Lyapunov, the following result is obtained: If azimuthal isotropy of the angular distribution of each particle with arbitrary θ and fixed direction of the remaining $n_s - 1$ particles is assumed, the mathematical expectation of the quantity α and its dispersion is given by

$$M(\alpha) = \int \alpha f(\theta_1, \varphi_1, \theta_2, \varphi_2, \dots, \theta_{n_s}, \varphi_{n_s}) \prod_{i=1}^{n_s} d\theta_i d\varphi_i =$$

$$= \int \alpha f_1(\theta_1, \theta_2, \dots, \theta_{n_s}) \prod_{i=1}^{n_s} d\theta_i d\varphi_i / 2\pi = 1, \quad (14)$$

$$D(\alpha) = \int \left[\sum_{i,j} \sin \theta_i \sin \theta_j \cos(\varphi_i - \varphi_j) \right] f_1(\theta_1, \dots, \theta_{n_s}) \prod_{i=1}^{n_s} d\theta_i d\varphi_i / 2\pi =$$

$$= M \left[1 - \frac{\overline{\sin^2 \theta}}{n_s (\overline{\sin^2 \theta})} \right] < 1. \quad (15)$$

where $f(\theta_1, \varphi_1, \theta_2, \varphi_2, \dots, \theta_{n_s}, \varphi_{n_s})$ is the probability density of multi-dimensional distribution. In the most general case, α differs from unity by the following: $M(\alpha) - 1 = aM \left[n_s \frac{(\overline{\sin \theta})^2}{\overline{\sin^2 \theta}} - 1 \right] \geq 0$, $a = [M(\cos \varphi)]^2 + [M(\sin \varphi)]^2$.

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The method suggested here is now used for the purpose of analyzing the azimuthal angular distribution of secondary particles in "jets" produced in photographic emulsions by singly charged cosmic particles. The experimental data used were obtained at Ya. Pernegr's laboratory. The α -values for 52 showers with n_s between 6 and 42, and Lorentz factors (in the c.m.s.) between 2.4 and 150 were calculated. The results obtained indicate the existence of a symmetric but anisotropic azimuthal angular distribution in individual showers. The experimental data are in contradiction to the hydrodynamic theory of "jet" formation in central collisions in the case of a cylindrical symmetry of secondary particles, and indicate an important part played by peripheral collisions. Meson emission occurred mainly near the plane, which is perpendicular to the direction of the spin of the excited center which appears theoretically to be a consequence of the two-center model of the multiple production in high-energy nucleon-nucleon collisions. The author thanks S. A. Azimov, M. I. Podgoretskiy and D. S. Chernavskiy for remarks, Ya. Pernegr for the experimental data, and G. M. Chernov for his assistance. There are 1 table and 10 references: 6 Soviet-bloc and 4 non-Soviet-bloc.

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The azimuthal angular distribution...

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ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Uzbekskoy SSR
(Institute of Physics and Technology of the Academy of
Sciences of the Uzbekskaya SSR)

SUBMITTED: June 27, 1960

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TOMASHEVSKIY, F.F., inzh.; CHUDAKOVA, P.V., inzh.; MATVEYEVA, M.I., inzh.

Increase in the specific characteristics of alkaline iron-nickel
diesel locomotive storage batteries. Elektrotehnika 35 no.5:
40-42 My'64 (MIRA 17:8)

RUDOY, M.; CHUDAKOVSKIY, N.

Granulated feed mill in Sal'sk. Msk.-elev. prom. 26 no.10:23-24 0'60.
(MIRA 13:10)

1. Zamestitel' glavnogo inzhenera Rostovskoy realizatsionnoy bazy
(for Rudoy); Glavnyy inzhener Sal'skogo kombikornovogo zavoda (for
Chudakovskiy).

(Sal'sk--Feed mills)

BUROV, D.I.; CHUDANOV, I.A.

Annual crops as a factor in the aggregate formation and structure
development of Chernozem soils. Pochvovedenie no.11:69-78 N '60.

(MIRA 13:11)

1. Kuybyshevskiy sel'skokhozyaystvennyy institut.
(Chernozem soils) (Soil physics)