JR..., ..

Safety rings, p. 520

SEVASTI A. Praha, Czechoslovakia. Vol. 9, no. 10, Oct. 1959.

Monthly list of East European Accessions (EEAI) LC. Vol. 9, no. 2, Feb. 1960. Uncl.

STOLL, Zdenek, ins.

Standardization of transmission chains and chain wheels at the International Organization for Standardization. Normalizace 11 no.6:189-191 Je '63.

1. Urad pro normalizaci a moreni, Praha.

STOUD, Zdenek

New system of measures. Ropa a uhlie 5 no.7:216-221 Jl'63.

1. Urad pre nomalizaciu a meranie, Praha.

STOUD, Zdenek, inz.

Quantities, units, and symbols in thermodynamics. Normalizace
11 no.8:238-239 Ag '63.

1. Urad pro normalizaci a meren', Praha.

9, 5100 (1043, 1160)

S/058/61/022/012/003/009
D251/D306

AUTHORS: Ilberg, Vladimir, Engineer, and Štourač, Ladislav,
              Engineer, Candidate of Sciences

TITLE: The influence of thermoelectric cooling on the value
              of the residual current of the collector and the power
              of germanium junction transistors

PERIODICAL: Slaboproudý obzor, v. 22, no. 12, 1961, 725-728

TEXT: The article discusses the influence of thermoelectric cool-
ing by a semiconductor cooling element working on the principle of
the Peltier effect and its influence upon the collector reverse
current I_{k0} and on the collector loss P_k in 200 mW germanium junc-
tion transistors. Methods for improving the functional transistor
parameters by thermoelectric cooling are discussed in several So-
viet papers and are also the subject of two Czech patents granted
to the authors of this article. The influences of thermoelectric
cooling upon static parameters of Soviet p-n-p P25 germanium junc-
tion tr

The influence of thermoelectric ...

... transistors were investigated and cooling elements used in
the tests consisted of n and p type semiconductor materials based
on the systems Bi-Te-Se and Bi-Te-Sb. Utilization of the cooling
element with an input of 2 W permitted considerable reduction of
the under normal operational conditions, i.e. at room temperature,
of $P_k \sim P_{kmax}$, and a four- to fivefold increase of the permissible
collector load at ambient temperatures of 25 - 40 C, while retain-
ing the nominal value of I_{ko}. Use of this method can also be ad-
vantageous to the function of the other semiconductor elements and
parts, whose working points and operation are adversely affected
by heat. Thermoelectric cooling of transistors requires consider-
able currents (10 to 20 A) at low voltage which makes this method
suitable for cooling under special conditions, where the overall
efficiency is not of importance and where a suitable source of d.
current is available to feed the cooling element, e.g. a storage
battery. The efficiency may considerably be increased and cooling
automatically controlled when the cooling element is connected in

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The influence of thermoelectric ...   D291/D306

series to the source of collector voltage of the power transistor,
or in series to the power rectifier. Thermoelectric cooling of
transistors will gain in importance when new thermoelectric mate-
rials for cooling elements and thermoelectric generators are intro-
duced. By combining three such elements, a temperature of -100°C
can be reached. There are 6 figures and 21 references: 12 Soviet-
bloc and 9 non-Soviet-bloc. The references to the 4 most recent
English-language publications read as follows: J. S. Saby: Fused
impurity P-N junction on transistors. Proc. IRE 40 (1952), no.11,
p. 358; J. A. Morton: Present status of transistor developments.
Proc. IRE 40 (1952), no. 11, p. 1314; W. W. Gärtner: Temperature
dependence of junction transistor parameters. Proc. IRE 45 (1957),
no. 5, p. 662; L. D. Armstrong, D. A. Jenny: Behavior of germani-
um junction transistors at elevated temperatures and power-tran-
sistors design. Proc. IRE 52 (1959), no. 3, p. 527.

ASSOCIATION: Ústav radiotechniky a elektroniky ČSAV, Praha (In-
               stitute of Radio Engineering and Electronics, Cze-
               choslovak AS, Prague) (V. Ilberg); Ústav technické

Card 3/4

The influence of thermoelectric ...   30600
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D291/D306

fyziky, ČSAV, Praha (Institute of Physical Technolo-
gy, Czechoslovak AS, Prague) (L. Štourač)

SUBMITTED: June 15, 1961

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4

The semiconducting compound SiTe. Karel Smirous, Ladislav Stourač, and Jan Bednař. Czechoslov. J. Phys. 7, 120-21 1957 (in German). It had been found previously that the tellurides of Pb and of Sn crystallize in the isometric (cubic) system and have a NaCl lattice. It was found also that Pb, Sn, and Ge each form only a single monotelluride (PbTe, SnTe, GeTe), but that Si forms not only the monotelluride, but also the ditelluride. The phys. properties of the previously described SiTe are: It m. 893° ± 4°. Its crystal lattice is not of the NaCl type. Its d. is 5.91. It is a semiconductor, with an av. cond. of 5 × 10⁻² ohm⁻¹ cm⁻¹. The curve for the temp. dependence of the cond. shows a break at room temp. Its thermal co-ef. is 1.5 × 10⁻³ cal./degree cm. sec.   V. H. Gottschalk.

MRKAT, J.

Semiconductors in modern electrotechnique. p.315.
(Technicka Praca, Vol. 9, No. 5, May 1957, Bratislava, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

CIBULKA, L.; BLAHA, J; SAITA, K.

SiTe semiconductors. p. 107. (Ceskoslovensky Casopis Pro Fysiku. Vestnik. Vol. 7, no. 1, 1957.)

SO: Monthly List of East European Accession (EEAL) LC, vol. 6, no. 7, July 1957. Uncl.

STOURAC, L.

TECHNOLOGY

ELEKTROTECHNICKY OBZOR.

STOURACE, L.   Indium antimonide as a material for the manufacture of
probes used in the measurements of magnetic fields by
means of the Hall effect. p. 627

Vol. 47, no. 12, Aug. 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 5
May 1959, Unclass.

Distr: 4E1x(g)/4E2d(b) 2 cys

Influence of aging on the change in electrical properties of semiconducting Bi,Te,-Bi,Se, systems. Ladislav Stourač (Czechoslov. Acad. Sci., Prague). Czechoslov. J. Phys. V. 717-20(1959)(in Russian).—The author describes the effect of aging observed on the semiconducting system Bi₂Te₃-Bi₂Se₃. The change in elec. cond. and thermoelec. force, which takes place during aging, is caused by the change in concn. of free electrons. The influence of this process on the efficiency of equipment employing the Peltier effect is analyzed.   A. Krembellen

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3

STO PAC, L.; SKIRCUS, K.

Cooling couples for direct energy conversion based upon semiconductive systems.
p. 210

ELEYTROTECHNICKY OBZOR. (Ministerstvo tezkeho strojirenstvi a Ceskoslovenske
vedecka technicka spolecnost pro eloktrotechniku pri Ceskoclovenska akademii
ved) Praha, Czechoslovakia. Vol. 48, No. 4, Apr. 1959

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 7, July 1959
Uncl.

VRBKA, I.; KOUŘIL, K.

Semiconductor compounds serving as material for the construction of cooling elements based on the Peltier effect. p.363

ELEKTROTECHNICKY OBZOR. (Ministerstvo tezkeho strojirenstvi a Ceskoslovenske vedecko technicka spolecnost pro elektrotechniku pri Ceskoslovenske akademii ved) Praha, Czechoslovakia
Vol.48, no.7, July 1959

Monthly List of East European Accession (EEAI) LC, Vol.9, no.11
Nov. 1959
Uncl.

Z/002/60/000/005/002/006
A205/A126

AUTHOR: Štourač, Ladislav, Candidate of Science

TITLE: International Conference on Semiconductor Physics in Prague

PERIODICAL: Věstník Československé akademie věd, no. 5, 1960, 516 - 522

TEXT: Mezinárodní konference o fyzice polovoičů (International Con-
ference on Semiconductor Physics) was convened in Prague on August 29 -
September 2, 1960, at the Československá akademie věd (Czechoslovak Academy
of Science), with the consent of the International Union of Theoretical and
Applied Physics (IUPAP) and the assistance of the ČSSR Government and the
UNESCO. The conference was attended by 168 Czechoslovak and 593 foreign de-
legates from a total of 26 countries; 278 reports were included in the a-
genda, but could not all be delivered. The 22 main reports on the present
state of research into basic problems of semiconductor physics will be pub-
lished in the Report of the Conference. The conference opened with a ple-
nary session at the Dům umělců (House of Artists) with an address by Minister
Z. Nejedlý, Academician and President of the ČSAV (Czechoslovak Academy of
Science) and 2 introductory reports. Academician A. F. Ioffe (USSR) read a

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paper on new ways in semiconductor research. Dr. W. Shockley (USA), Bearer
of the Nobel Prize, reported on his research on properties of p-n junctions.
Other reports were delivered in 21 sections (A - W), 5 of which were organ-
ized as discussion groups. Semiconductor band structures were dealt with
in section (B). F. Herman (USA) reported on application of computers in
calculation of semiconductor parameters. W. Kohn (USA) reported on the
present knowledge of semiconductor band structure and on theoretical data
processing. S. V. Vonsovskiy and G. G. Taluc (USSR) reported on a more
accurate multi-electron theory. J. G. Phillips reported on wider applica-
tion of the method to study electron-structures of solid bodies, which was
primarily developed and applied by E. Antončík of the ÚTF ČSAV (Institute
of Technical Physics, Czechoslovak Academy of Science). Transport phenom-
ena, dissipation processes, fast electrons, galvanomagnetic and other phe-
nomena of semiconductors were dealt with in sections (C, D and E). C. Her-
ring (USA) reported on the progress in semiconductor transport-effect theo-
ry. Reports on the mechanism of interaction between free current carriers
and acoustic and optical phonons in semiconductors with homeopolar and het-
eropolar binding were delivered by G. Whitfield (USA), W. Klose (GDR) and

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I. M. Tsidilkovskiy (USSR). T. P. McLean and E. G. S. Paige (England) reported on interaction between both current carrier types in germanium. B. M. Vul, E. I. Zavaritskaya and V. A. Chuyenkov (USSR) reported on electrical conductivity of semiconductors in strong electric fields. A. L. McWhorter, R. H. Rediker (USA), J. C. Sohm (France) and G. Lautz (FRG) reported on impulse ionization of germanium and silicon. W. Sasaki (Japan), W. F. Wei and W. F. Love (USA) reported on new magneto-resistance phenomena. R. J. Sladek, R. W. Keyes (USA) and others reported on galvanomagnetic phenomena in semiconductor materials. D. L. Dexter (USA) reported on the theory of excess electron-carrier pairs and holes originating in semiconductors. Various transport-phenomena were dealt with in section (F). R. N. Hall (USA) reported on the application of the tunnel phenomenon in the study of transport phenomena. W. Shockley and K. Hubner (USA) reported on the discovery of the tunnel effect and P. Aigrain (France) reported on the helicon theory. Volume recombination in semiconductors was dealt with in section (G). S. G. Kalashinkov (USSR) reported on research conducted at Soviet laboratories on recombination and impurities of germanium and silicon. Optical properties of semiconductors were dealt with in two sessions of section (I). B. Lax (USA) reported on the significance of magnetic fields, low temperatures and

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the entire electromagnetic spectrum on semiconductor research. J. Tauc and
A. Abrahám of the ÚTF ČSAV (ČSSR) reported on the dependence of reflection
spectra on the composition of solid-solution Ge-Si systems and some semi-
conducting compounds of the $A^{III}B^V$ type. F. Lukeš and E. Schmidt (ČSSR) re-
ported on the dependence of optical constants of germanium on temperature.
Phenomena, connected with the origin of "excitrons" (term introduced by So-
viet physicist Ja. I. Frenkel) in ion crystals and semiconductors were dealt
with in section (K). E. F. Gross (USSR) reported on optical and magneto-
optical phenomena and their application in studies of the band structure of
semiconductors and excited states. J. R. Haynes, M. Lax, W. F. Flood (USA),
C. Benoita and O. Parodi (France) reported on the influence of "excitrons"
on current-carrier recombination in germanium and silicon. J. Pastrňák of
the FÚ ČSAV (Physical Institute Czechoslovak Academy of Science) reported
on optical properties of copper-oxide. Photoconductivity of semiconductors
was dealt with in section (L). R. A. Smith and A. Rose (USA) reported on
the contribution of photoconductivity to the knowledge of basic semiconduc-
tor properties. J. Shwiderski (Warsaw) reported on further development of
inhomogeneity investigation of semiconductor crystals with the aid of the

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photovoltaic effect, which was discovered by J. Tauc and Z. Trousil of the
ÚTF ČSAV. Physics of surface effects were dealt with in section (M). M.
Lax (USA) reported on the present knowledge of semiconductor-surface effects.
E Antončík, J. Koutecký and M. Tomášek (ČSSR) reported on the basic theory
of semiconductor-surface electron structure. J. A. Dillon jr. and R. M.
Oman (USA) reported on tests to prepare an entirely pure germanium surface.
A V. Rzhanov (USSR), A. Many (University of Jerusalem) and others reported
on studies of germanium-surface states. Resonance of semiconductors was
dealt with in section (N), the pertinent paper was read by G. Feher (USA).
Thermal and thermoelectrical properties of semiconductors were dealt with
in section (O). Academician Ioffe (USSR) reported on electrical and thermal
properties of semiconductors which are not yet fully illuminated. (Ioffe
heads a school at the Semiconductor Institute of the Soviet Academy of Sci-
ence in Leningrad). Problems of ion crystals were dealt with in section
(P). W Künzing (USA) reported on the present state of color-center models
in alkalimetal halogenides, established by paramagnetic resonance. S. I.
Pekar (USSR) compared calculated and test-values of parameters, character-
istic for absorption and emission bands of alkali-metal halogenides. A.
Bohun and others, of the ÚTF ČSAV reported on tests, made at the ÚTF to

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study physical phenomena of NaCl crystals with cadmium admixtures. K. Vacek of the Charles University in Prague reported on the theory of luminiscence in silver halogenides. General problems of semiconductor physics were dealt with in section (Q). G. Busch (Switzerland) reported on magnetic properties of Ge and Si solid solutions. K. W. Böer (GDR) reported on recently observed inhomogeneities in semiconductors and insulators. L. V. Keldysh, V. S. Vavilov and K. I. Britsin (USSR) reported on the investigation of electrical-field distribution and currents in semiconductors with the aid of the electrooptical effect. Semi-conducting compounds were dealt with in section (R). C. G. B. Garrett (USA) reported on the present state of studies on organic semiconductors. F. J. Morin (USA) reported on properties of compounds containing transition metals. G. H. Jonker (Netherlands) and H. P. R. Frederik (USA) reported on related problems. V. P. Zhuze and other Soviet physicists reported on properties of materials which have a missing atom in the grid-structure of the semiconductor. H. Welker (FRG) reported on complex semiconductor systems with covalent binding. Further reports were made by K. B. Tolpyg of Kiyev, W. B. Pearson (Canada) and J. P. Suche' (France). The discussion in section (S) was opened by D. N. Nas-

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ledov (USSR) who read a paper on present state of research into semiconductor compounds of the $A^{III}B^{V}$ type, such as indium antimonide, indium arsenide, gallium arsenide, etc. Properties of elements tellurium and selenium were dealt with by section (T). Reports were delivered by J. S. Blakemore (USA), F. T. Hedcock (Canada), and F. Eckart (GDR). V. Prosser (CSSR) reported on the dependence of band structure on optical and photoelectrical properties of selenium. Discussions in section (U) were opened by a report of M. Rodot (Paris) on the present knowledge of semiconducting heavy-element tellurides and selenides and their solid solutions. This report was supplemented by papers of K. Smirous and L. Stourač of the ÚTF ČSAV. Mrs. H. Rodot (France) reported on new systems, suitable for direct energy conversion, on properties of antimony and silver tellurides, etc. Discussions in section (V) were opened with a report by W. W. Piper (USA) on semiconducting cadmium and zinc sulfides. Discussions in section (W) were opened with a report by E. Justi (FRG) on semiconductors ZnSb and CdSb, who also acknowledged the two papers in this field, compiled by the ÚTF ČSAV. The closing plenary meeting was held on September 2, 1960. J. Tauc evaluated in his summary report the contributions made at the conference, and mentioned the progress made since the last conference held in Rochester, USA. The significance of basic physical research into semiconductors was emphasized by J. Bardeen (USA) and B. M. Vul (USSR).

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h2795

S/194/62/000/011/037/062
D295/D308

AUTHORS: Ilberg, Vladimír and Stourač, Ladislaw

TITLE: A semiconductor device with a p-n junction cooled by
                a Peltier cell

TEXT: A method is suggested for combining a semiconductor device
with a Peltier-cell cooler, in such a manner that the Peltier cell
is in direct contact with the device to be cooled. When both de-
vices are mounted in a single capsule, an insulating layer is usu-
ally placed between them which prevents the possibility of electric
coupling. This, however, is accompanied by a lowering of the effi-
ciency of the cooling device, since there is a considerable tempe-
rature drop across the insulating layer. The construction suggested
removes this shortcoming. A schematic of a diode with Peltier cool-
ing is shown in the figure, where: 1 is the diode, 2 are the stubs

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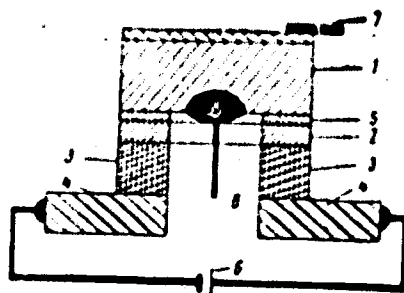
A Semiconductor device ...   S/194/62/000/011/037/062
                                              D295/D308

of the Peltier cell, 2 is the metal slab connecting them (the cold
junction), 4 is a steel slab (the hot junction), 5 is solder, 6
is a battery, and 7 and 8 are the diode terminals. /Abstracter's
note: Complete translation._/

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S/194/62/000/003/043/066
D201/D301

AUTHORS: Ilberg, Vladimir and Stourač, Ladislav

TITLE: A p-n junction semiconductor device cooled by a Pelle-
              tier effect element

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika,
              no. 3, 1962, abstract 3-4-55k (Czechoslovakian patent
              cl. 21 g, 11/02, no. 96896, 15.10.60)

TEXT: In order to decrease the dependence of a semiconductor device
(SD) parameters on temperature, it is suggested designing it with a
permanent mechanical connection with a Peltier effect (PE) ele-
ment, which would ensure good thermal conduction. The principle
of the invention lies in the fact that the SD is connected in series
with PE so that all the operating current is passed though PE,
forming at the junction of the two devices a barrier layer junc-
tion. It pays to have a separate supply for the PE, the output pow-
er of which is controlled by operating current of a junction diode.
The construction of a PE coded junction diode, photodiode, transis-

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A p-n junction ...

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D201/D301

tor and of a phototransistor in given. The construction in suitable for mass-production. /Abstracter's note: Complete translation._7

Card

STCURAC, L.

Conference on Thermoelectricity in Durham. Cs cas fys 12 no.1:
89-90 '62.

1. Ustav technicke fysikv, Ceskoslovenska akademie ved, Praha.

9.4370

STOURAC, L., Inz., C.Sc.

A scientific conference on Hall generators and their use. Slaboproudy
obzor 24 no.2:119-120 F '63.

ACCESSION NR: AP3003616   Z/0055/63/013/005/0350/0357

AUTHOR: Smirous, K.(Deceased); Hruby, A.; Stourac, L.

TITLE: The influence of impurities on the electric and thermoelectric
properties of cadmium antimonide single crystals

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 13, no. 5, 1963,
350-357

TOPIC TAGS: cadmium antimonide electric properties, cadmium antimo-
nide thermoelectric properties, p type cadmium antimonide, n type
cadmium antimonide, cadmium antimonide

ABSTRACT: In order to determine the influence of impurities in CdSb
single crystals, a study was made of electric and thermoelectric pro-
perties of high-purity CdSb single crystals doped with Cu, Ag, In, Ga,
Ge, Sn, Pb, Se, and Te.   It was proved that the n-type conductivity
is caused by the presence of electrically active impurities.   Cu,
Ag, Ge, Sn, and Pb impurities in CdSb single crystals behave as ac-
ceptors and In, Ga, and Te, as donors (the behavior of Se could not

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ACCESSION NR: AP3003616

be uniquely determined). A schematic model for the substitution of
impurity atoms in the CdSb lattice is proposed. The study of carrier
concentrations indicates that the first and fourth group elements re-
place the Cd atoms, and those of the fourth and sixth groups replace
the Sb atoms. The temperature dependence of the mobility of current
carriers in the impurity region was determined to be proportional to
$T^{-1.34}$ for electrons and to $T^{-1.25}$ for holes. It was verified that
for lightly and heavily doped samples the electron mobility is smaller
than the hole mobility. The density effective masses of electrons and
holes were also determined. Orig. art. has: 5 figures, 5 tables,
and 2 formulas.

ASSOCIATION: Ustav fyziky pevnych latek CSAV, Prague (Institute of
Solid-State Physics CSAV)

SUBMITTED: 13Apr62   DATE ACQ: 12Jun63   ENCL: 00

SUB CODE: PH   NO REF SOV: 005   OTHER: 022

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ACCESSION NR: AP4018176   Z/0055/64/014/002/0130/0136

AUTHOR: Hruby, A.; Stourac, L.

TITLE: Electrical properties of CdSb single crystals doped with silver

SOURCE: Chekhosl. fiz. zhurnal, v. 14, no. 2, 1964, 130-136

TOPIC TAGS: electric property, CdSb single crystal, silver dope, electric con-
ductivity, Hall effect, thermoelectric force, reciprocal temperature, extrinsic
conduction, lattice mobility, hole, ionized acceptor, impurity center

ABSTRACT: An earlier paper (Czech. J. Phys., 133, 1963) studied the properties of
CdSb single crystals doped with elements of the first group of the periodic system.
The present studies the electric and thermoelectric properties of CdSb single
crystals weakly and heavily doped with silver, and gives measurements of the
electrical conductivity, the Hall effect and the thermoelectric force of CdSb
samples oriented along the crystallographic axis b with various concentrations of
silver in three sets of graphs as a function of the reciprocal temperature. In
extrinsic conduction, the temperature dependence of the lattice mobility of the
holes was found to have the form T^{-1} in this direction. The paper discusses the

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effect of the scattering of holes on ionized acceptors upon the temperature depen-
dence of the mobility, and calculates the effective masses of holes in extrinsic
conduction, finding that they increase as a function of the content of impurity
centers: $m^*_p = (0.3 \text{ to } 0.65)m_0$ for $N_A = 4 \times 10^{15}$ to 10^{19} cm^{-3}. Original has
1 table, 5 graphs and 10 numbered equations.

ASSOCIATION: Institute of Solid State Physics, Czechoslovak Academy of Sciences,
Prague

SUBMITTED: 31Jul63   DATE ACQ: 18Mar64   ENCL: 00

SUB CODE: PH   NO REF SOV: 000   OTHER: 004

Card 2/2

ZOUHAR, Ladislav

Multilateral cooperation in semiconductor physics. Vestnik CSAV 73 no. 1: 04-05 '64.

GROPPER, L.

Dependence of Hall constant of p-type cadmium antimonide on magnetic field. Chekhosl fiz zhurnal 15 no 2:140-142 '65.

1. Institute of Solid State Physics of the Czechoslovak Academy of Sciences, Prague 6, Cukrovarnicka 10. Submitted November 4, 1964.

L H?°5-66   ~WT(t)/EWP(b)   IJP(c)   JD

ACCESSION NR: AP5006839

CZ /0055/65/015/002/0140/0142

AUTHOR: Stourac, L.

TITLE: The Hall constant in p-type cadmium antimonide as a function of the mag-
netic field

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 15, no. 2, 1965, 140-142

TOPIC TAGS: cadmium compound, Hall constant, Hall mobility, phonon, semiconductor
band structure

ABSTRACT: The dependence of the Hall constant on the change in the ratio of Hall
and drift mobilities claimed in previous studies was not observed. CdSb crystals
prepared by the modified Czochralski method were used. The two single crystals
had hole concentrations of 5×10^{15} and 2.5×10^{17} cm^{-3} respectively. Magnetic
fields were varied from 400 to 8000 G at temperatures of 80 and 300°C on samples
oriented by the x-ray method. The results show that the Hall constant in the
whole range of measurement under these conditions is independent of magnetic field
in both the b and c crystallographic directions. This is explained by assuming
only one type of hole. It agrees with the theoretical work of Frei and with the

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ACCESSION NR: AP5006839   /8

conclusions of Pilat. In contrast to the findings of Tovstjuk the ratio of the
Hall and drift mobilities of holes up to concentrations of 10^{17} cm^{-3} can be regard-
ed as independent of magnetic field. This agrees with the assumption that hole
scattering at these concentrations occurs primarily on acoustic phonons. "The
author thanks A. Hruby, C.Sc., V. Miskova and J. Kaspar for preparing the materials
and M. Neuvirtova and J. Mrnavkova for help in the measurements." Orig. art. has:
1 figure.

ASSOCIATION: Institute of Solid State Physics, Czechoslovak Academy of Sciences,
Prague

SUBMITTED: 06Nov64   ENCL: 00   SUB CODE: SS

NO REF SOV: 004   OTHER: 006

Card 2/2

L 21319-66   T/EWP(t)   IJP(c)   JD

ACC NR: AP6003659   SOURCE CODE: CZ/0055/65/015/010/0740/0746

AUTHOR: Hruby, A.; Kubelik, I.; Stourac, L.

ORC: Institute of Solid State Physics, Czechoslovak Academy of Sciences, Prague

TITLE: Electrical conductivity and thermoelectric power of heavily doped P-type CdSb

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 15, no. 10, 1965, 740-746

TOPIC TAGS: cadmium compound, antimonide, Hall effect, Fermi statistical theory, Coulomb interaction, hole mobility, valence band, thermoelectric property

ABSTRACT: An investigation of the electrical conductivity, Hall effect, and thermoelectric power as a function of the temperature was performed in the (c) and (b) crystallographic directions on cadmium antimonide single crystals strongly doped with silver. The anisotropy of the electrical conductivity and the mobility of the holes and their mechanism of scattering on lattice vibrations and ionized acceptors are discussed. Also the density of states effective mass of holes is determined. The origin of the anisotropy of the hole mobility and the model of the CdSb valency band are considered. Graphs showing the temperature dependences of the electrical conductivity, thermoelectric power, Hall mobility of holes, and the hole effective mass are presented. Also a table showing the concentration of acceptors in different samples obtained from measurement of the Hall constant at 80K in both

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(b) and (c) crystallographic directions is given. Measurement in the (a) crystallo-
graphic direction was not carried out because of brittleness of the material at
this orientation. The thermoelectric power was analyzed by means of the general
expression applicable for Fermi-Dirac statistics. The Brooks-Herring method of
screened Coulomb potential was used in measuring the temperature dependence of hole
mobility. The experiment showed that the valence band has two equivalent maxima
on its axes of symmetry. The authors thank Prof. J. Tauc and V. Frei for advice
and stimulating discussions, V. Miskova, J. Berankova and J. Kaspar for preparing CdSb
single crystals and M. Neuvirtova and J. Mrnavkova for help in the experimental work.
Orig. art. has: 7 figures, 1 table, and 6 formulas. [Based on author's abstract]

SUB CODE: 20/ SUBM DATE: 14Apr65/ ORIG REF: 011/ OTH REF: 006/ SOV REF: 001/

Card 2/2

BUSHIN, V.; YEFREMOV, A.;STOUMOV, V., inzh.

Using assembly-line methods in building large-panel
houses. Stroitel' no.12:7,10-11 D '59.   (MIRA 13:3)

1. Glavnyy inzhener upravleniya Spetsstroy (for Bushin).
2. Glavnyy inzhener upravleniya Montazhshilstroy (for Yefremov).
3. Trest Cherepovetsmetallurgstroy, Cherepovets, Vologodskaya
oblast' (for Stoumov).
        (Assembly-line methods) (Leningrad--Apartment houses)

Distr: 4E2d(b) 2oys

Inversion of the type of conductivity in the semiconductor system $Zn_xCd_{1-x}Sb$. V. Karel Smirous and Ladislav Stourac (Czechoslovak. Acad. Scis., Prague). Z. Naturforsch. 14a, 1043-4(1959). The sign of the thermoelec. force is changed from plus to minus in Te-doped $Zn_{1-x}Cd_xSb$ semiconductors. The Te concn. lies between 0.025 and 0.5%. A neg. thermoelec. force and weak n-type rectifier characteristics were found at room temp. in samples contg. 0.1% Te and an excess or deficiency of Sb. The thermoelec. force is decreased with decreasing temp. and inversion to pos. values was observed at −4°. F. Schossberger

Stoianova - Ivanova, B

Composition of the stearoptene of Bulgarian Rose oil.
D. Ivanov, Ch. Ivanov, and B. Stoianova-Ivanova (Univ.,
Sofia). Compt. rend. acad. bulgare sci. 5, No. 2, 21-4(1952)
(in French).—Rose oil (200 g.), dissolved at 80° in 70%
EtOH, cooled, and filtered at 0°, yielded 50 g. stearoptene
(I), semicryst. mass. A small portion of I put on a porous
plate gave a product m. 30-5°. Oxygenated products
were removed from I by filtration through alumina. Ten
g. of I dissolved in petr. ether was filtered through a column
of 1 cm. diam. packed with alumina to a height of 30 cm.
Two fractions were obtained: (1) 7.8 g. cryst. mass at room
temp., the 2nd a liquid which solidified in H₂O; 1.053 g. of
the solid product was chromatographed in a column 40 cm.
long and 15 mm. in diam. contg. 60 g. alumina. The
chromatogram was developed with 8 fractions of 25 cc.
each of petr. ether, one of petr. ether plus benzene, one of
benzene, one of benzene plus EtOH, and one of EtOH.
The residue of the 2nd and 3rd fraction was again chro-
matographed under the same conditions. The elution was
very sharp, 0.950 g giving 0.907 g., m. 34.5-5.5. This
product was crystd. 3 times from EtOH and m. 37-8°,
b. 239°.   A. Halasz

MILLER, D. J., and FIGITINA, N. T.

"Critical Parallels and Latitudinal Zonality of Solar Activity"
Tsirkulyar Astronom. Observ. Lvovsk. un-ta, No 28, 1954, 20-25

The highest latitude of spot formation zone (±35°) coincides with
the latitude of one of the critical parallels. The middle of the solar
activity zone (for flocculi ±55 to 75°, for prominences ±45 to 60°) is
also close to another critical parallel (±61 to 62°). The active sun
layer rotates nonuniformly, because the critical parallels are located
on an ellipsoid rotating with variable angular velocity. The shape of
the sun is flattened at the poles, evidenced by critical parallels
on the rotating ellipsoid. (RZhAstr, No 10, 1955)

SO: Sum-No. 787, 12 Jan 56
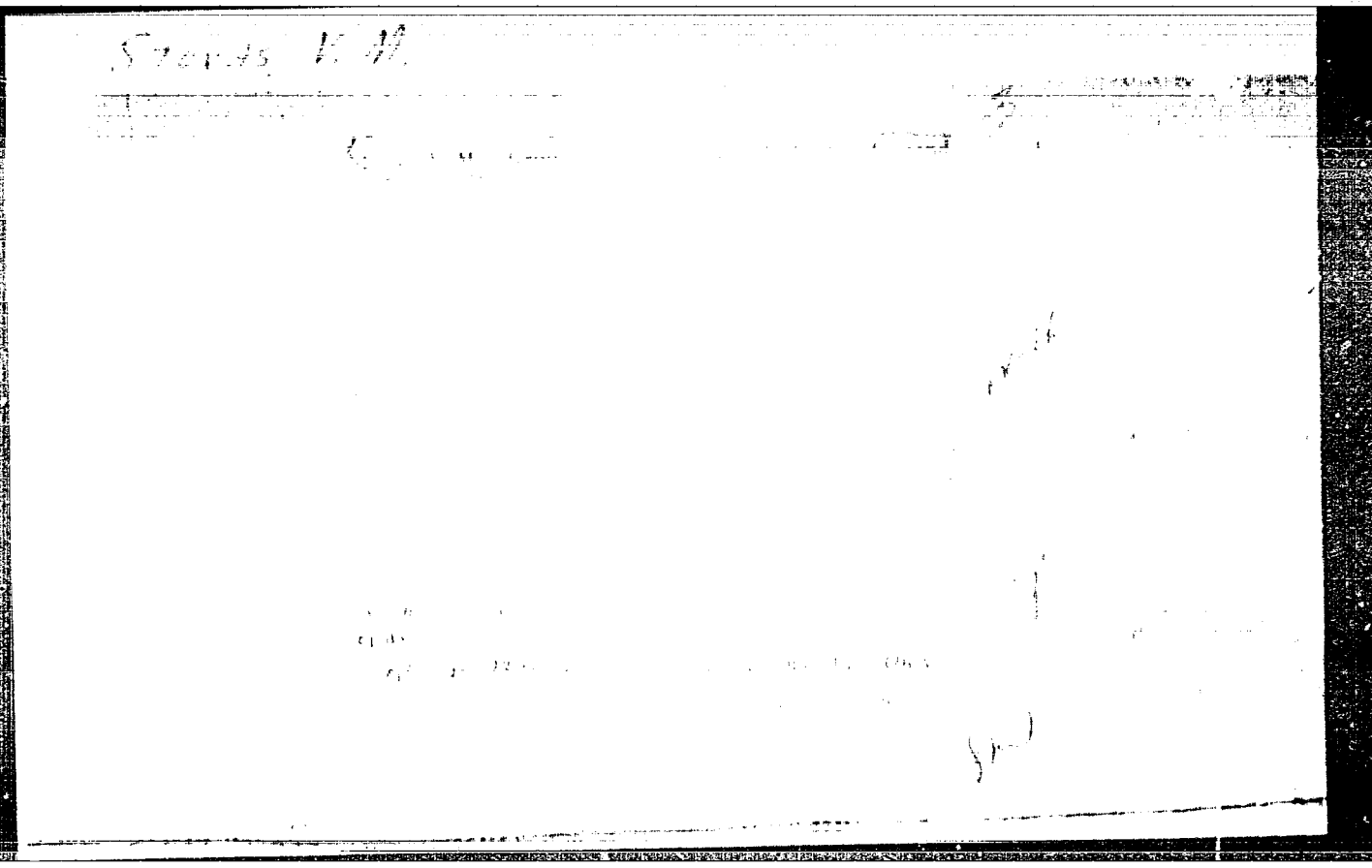
STOVAS, M.V.

Irregularity in the rotation of the earth as planetary-geomorphological and geotectonic factors. Geol. zhur. 17 no.3:58-69 '57.

(MIRA 11:2)

(Earth—Rotation)
(Geology, Structural)

STOVAS, M.V.

Latitudinal zonality of earth seismies. Nauch. dokl. vys. shkoly;
geol.-geog. nauki no.3:19-29 '58.   (MIRA 12:1)

1.Dnepropetrovskiy gornyy institut.
                    (Seismology)

STOVAS, M.V.

Changeability in the earth's rotation and the geotectonics.
Geol. sbor. [Lvov] no.5/6:447-461 '58.   (MIRA 12:10)

1.Gornyy institut im. Artema, Dnepropetrovsk.
                    (Earth--Rotation) (Geology, Structural)

3(1)

AUTHOR: Stovas, M.V.   SOV/43-59-1-12/17

TITLE: The Potential of the Deforming Forces and its Variation Under
            Variation of the Rotation of the Ellipsoid (Potentsial
            deformiruyushchikh sil i yego izmeneniye s izmeneniyem ro-
            tatsionnogo rezhima ellipsoida)

ABSTRACT: The potential of the deforming forces is the variable part
            of latitude of the potential of the centrifugal force which
            according to L.S. Leybenzon determines the compression of the
            ellipsoid. The author considers the potential of the deforming
            forces acting on a unit of mass which is on an ellipsoid, and
            he investigates the variation of the potential under rotation
            of the ellipsoid. Among others the author states : On the degree
            of latitude $\varphi \pm 35°$ the potential is equal to zero; for

            $\varphi = 0, \dfrac{\pi}{2}$ there are obtained extreme values; the deforming

            force F_2 is decomposed into the tangential component F_M (to

            the meridian) and the normal component F_N ; for $\varphi = \pm 35°$

Card 1/2

The Potential of the Deforming Forces and Its   SOV/43-59-1-12/17
Variation Under Variation of the Rotation of the Ellipsoid

it is $F_2 = F_M$, $F_N = 0$; for $\varphi = 0$, $\frac{\pi}{2}$ it is $F_2 = F_N$, $F_M = 0$.
The variation of the radial deforming force in dependence on the
angular velocity of the ellipsoid causes the deformation of the
ellipsoid.
The author mentions Krasovskiy's ellipsoid.
There are 6 figures, and 7 tables.

SUBMITTED: December 30, 1957

Card 2/2

DODIN, A.Ya., inzh.; KRYUKOV, I.I., dotsent; PRONIN, A.I., inzh.;
SIRYACHENKO, K.P., inzh.; STOVAS, M.V., dotsent; EPSHTEYN, M.M.,
dotsent

Engineering and geodetic observations on deformations in transport-
and-dumping bridges. Ugol' Ukr. 3 no.7:24-27 Jl '59.
(MIRA 12:11)

1.Dnepropetrovskiy gornyy institut.
        (Mine surveying)

z(6)   SOV/21-59-5-16/25

AUTHOR.   Stovas, M.V.

TITLE   On a Possible Cause of Periodic Formation of Planetary
             Fractures and Basalt Effusions

PERIODICAL   Dopovidi Akademii nauk Ukrains'koi RSR, 1959, Nr 5,
             pp 522-524 (USSR)

ABSTRACT: This is a brief summary of a survey of literature on this
             subject (indicated in the literature reference block). The
             decrease in the period of the Earth's rotation required for
             fracturing the crust layer of the Earth's surface is
             11 minutes, according to L.S. Leybenzon (Ref. 3), which
             with an increase in the length of the day by 1.6 to 2.4
             seconds for every 100,000 years should give a 30-40 mil-
             lionth cyclicity in the discharge of accumulated stresses
             in the crust layer, generating the formation of new, and
             revival of old planetary fractures. Such cyclic trans-
             formation of the Earth, as to the scale of geological time
Card 1/3   and repetition, as well as the planetary nature of the

SOV/21-59-5-16/25

On a Possible Cause of Periodic Formation of Planetary Fractures and
Basalt Effusions

phenomenon, is substantiated by historical geology
(Ref. 4 and 7). Planetary fractions of meridianal and
submeridianal directions reached 2000-4000 km, and arose
mainly in the equatorial zone and in high-latitude zones
of both hemispheres (± 62°) /Ref. 5-7/. The latitudinal
compression of the crust layer in the equatorial zone en-
tailed extensions of the crust layer at high latitudes, and
vice versa. A boundary line of combined deformations was
located along the 35° parallel, according to Li Ssu-kuang
(Ref. 4) between 30-40° latitude. The latitudinal and
sublatitudinal planetary fractions occurred mainly in the
middle latitudes (Ref. 4-7) near the zone of the critical
parallel ± 35°. There are 14 references, 12 of which are
Soviet, 1 French and 1 American.

ASSOCIATION: Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining
Card 2/3   Institute)

SOV/21-59-5-16/25

On a Possible Cause of Periodic Formation of Planetary Fractures and
Basalt Effusions

PRESENTED: By V.G. Bondarchuk, Member of the AS UkrSSR

SUBMITTED: December 23, 1958

Card 3/3

5 (5)   SOV/21 59-6-7/27

AUTHOR: Stovas, M. V.

TITLE: Some Questions on the 35 th Parallel of an Ellipsoid of
               Rotation

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1959, Nr 6,
               pp 618 - 620 (USSR)

ABSTRACT: The author presents the result of a mathematical calculation
               of the deforming force acting on the globe at the critical
               (±35°) parallel, stating that: 1) the potential of deforming
               forces there equals zero, 2) the normal deforming force like-
               wise equals zero, 3) the tangential deforming force equals
               the full deforming force and is directed along a tangent in
               the meridian direction; 4) the change in the tangential de-
               forming force with the change in the rotational regime of an
               incompressible ellipsoid does not depend on the homogeneity
               or heterogeneity of the chosen model and is equal to the
               change in the full deforming force. The potential of de-
Card 1/3   forming force is expressed.

Some Questions on the 35-th Parallel of an Ellipsoid of Rotation

$$u_z = \frac{\omega^2}{6} r^2 (1 - 3\sin^2\varphi) = \frac{\omega^2 a^2 (1-\alpha)^2 (1 - 3\sin^2\varphi)}{6[(1-\alpha)^2\cos^2\varphi + \sin^2\varphi]} \quad (1)$$

The full deforming force is represented by equation

$$F_2 = \frac{1}{3}\omega^2 r \ (1 + 3\sin^2\varphi)^{1/2}, \quad (2)$$

where "ω" is angular rotation speed, "r" is radius of ellipsoid vector, φ is the geocentric latitude and "α" is the polar pressure. The final equation, arrived at after a series of calculations, is expressed for the 35-th parallel in the following form:

$$\frac{\partial F}{\partial\omega} = \frac{\partial F_2}{\partial\omega} = \frac{2}{3}\omega r \ (1 + 3\sin^2\varphi)^{1/2}. \quad (12)$$

Card 2/3   There is 1 diagram.

SOV/21-59-6-17/27

Some Questions on the 35-th Parallel of an Ellipsoid of Rotation

ASSOCIATION: Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining
                Institute)

PRESENTED: By V. H. Bondarchuk (V.G. Bondarchuk) Member, AS UkrSSR

SUBMITTED: Januar 3, 1959

Card 5/5

84(0)

AUTHOR: Stovas,M.V.   SOV/43-59-13-12/16

TITLE: Deformations of the Ellipsoid Parameters by Variation of
             Ellipticity (Critical Parallels)

PERIODICAL: Vestnik Leningradskogo universiteta, Seriya matematiki,
             mekhaniki i astronomii, 1959, Nr 13(3), pp 121-136 (USSR)

ABSTRACT: The author considers an ellipsoid of revolution of an incom-
             pressible matter rotating with a variable rotative speed. The
             variation of the rotative speed implies a variation of the
             potential of the deforming forces and consequently the variation
             of the ellipticity. The author investigates the variation of the
             principal constants of the ellipsoid (radius of the parallel
             circuit, local vector, mean radius of curvature, arc length of
             the meridian, area of a zonal strip etc.) in dependence of the
             ellipticity. The author proves the existence of seven critical
             parallels ($P \approx 0$, $\pm 20°$, $\pm 35°$, $\pm 48°$, $\pm 62°$, $\pm 65°$, $\pm 90°$). These
             characterize the concomitant deformations. The main role plays
             the parallel $\pm 35°$, here appears a change of signs of the

Card 1/2

Deformations of the Ellipsoid Parameters by   SOV/43-59-13-12/16
Variation of Ellipticity (Critical Parallels)

        deformations. Several tables contain the numerical values of the
        investigated variations for the earth. The author mentions
        Krasovskiy.
        There are 7 tables, 6 figures, and 2 Soviet references.

SUBMITTED: December 30, 1957

Card 2/2

STOVAS, M.V.

Solar activity and critical parallels. Meshdunar. geofis. god
[Kiev] no.2:105-111 '60.   (MIRA 14:1)

1. Dnepropetrovsk Mining Institute.
                           (Sun)

STOVAS, M.Y.

Displacement of a point on the surface of a deformed uniform incom-
pressible ellipsoid of rotation with a change in compression. Dop.
AN URS (no.8:1070-1073 '60.   (MIRA 13:9)

1. Dnepropetrovskiy gornyy institut. Predstavleno akademikon AN USSR
V.G. Gonfarchukom.
                              (Ellipsoid)

STOVAS, M.V.

Some regularities in the geographical distribution of platforms and
folds. Geol. zhur. 20 no. 4:54-61. '60.   (MIRA 14:4)
                    (Geology, Structural)

3. 9000 (1041, 1327 only)
3. 9300

84665

S/020/60/135/001/018/030
B006/B056

AUTHOR: Stovas, M. V.

TITLE: The Problem of the Formation of Planetary Deep Faults in
            the Earth Crust

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 1,
            pp. 69-72

TEXT: The present paper investigates the main tension distribution in a
spherical layer for four different models of this layer. Such a layer
is characterized by the inner radius R_0, the outer radius R_1, the Poisson
number m, the modulus of shearing G, and the quantities K and t. The fol-
lowing assumptions are made for the model:

Model A: $R_1 - R_0$ = 64 km, K=100, t=0.2, m=3.7, G=2·10^{11} dyn/cm^2;

Model B: $R_1 - R_0$ =127 km, K=50, t=0.2, m=3.7, G=4.5·10^{11} dyn/cm^2;

Model C: $R_1 - R_0$ =640 km, K=10, t=0.2, m=3.7, G=7·10^{11} dyn/cm^2;

Model D: $R_1 - R_0$ =2900 km, K=2.2, t=0.2, m=3.7, G=2·10^{12} dyn/cm^2.

Card 1/3

P4465

The Problem of the Formation of Planetary   S/020/60/135/001/018/030
Deep Faults in the Earth Crust   B006/B056

The distributions of the main tensions σ_1, σ_2, and σ_3 are investigated.
Figs. 1 and 3 show the patterns of the distribution of σ_1 and σ_3 according
to breadth and depth of the models D and C respectively. Fig. 2 shows the
breadth-distribution of σ_2 in the meridian plane. All models have in com-
mon that the main tensions undergo a change of sign at $35^\circ C$. The effect of
an increase (and a decrease) of the polar compression of the globe upon
the tension distributions is discussed. P. F. Pankovich is mentioned.
There are 3 figures.

ASSOCIATION: Dnepropetrovskiy gornyy institut im. Artema
                (Dnepropetrovsk Mining Institute imeni Artem)

PRESENTED: August 19, 1960, by V. V. Shuleykin, Academician

SUBMITTED: August 17, 1960

Card 2/3

ELEC

S/020/60/135/001/018/030
B006/B056

Fig. 3
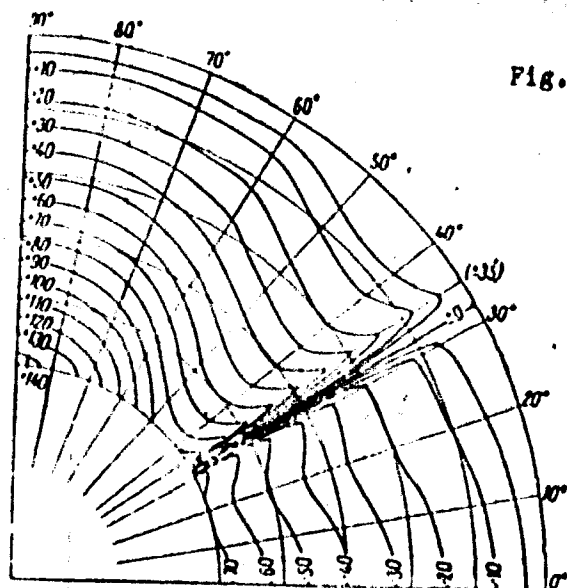
Card 3/3

STOVAS, M. V.

Doc Tech Sci - (diss) "Experience in mathematical analysis of
tectonic processes caused by changes in the Earth's figure."
Leningrad, 1961. 37 pp; (Ministry of Higher and Secondary
Specialist RSFSR, Leningrad Order of Lenin and Order of Labor
Red Banner Mining Inst imeni G. V. Plekhanov); 150 copies;
price not given; list of author's works on pp 36-37 (17 entries);
(KL, 7-61 sup, 230)

STOVAS. M.V.

Latitudinal boundaries of the bands of Jupiter. Mezhdunar.geofiz.
god no.3:65-70 '61.
(Jupiter (Planet))
(MIRA 14:10)

AUTHOR: Stovas, M. V.

TITLE: The significance of the irregularity of the earth's
                 rotation in the formation of planetary abyssal fractures
                 in the crust

TEXT: On the change of polar contraction, a strain ellipsoid—with
semiaxes σ_1, σ_2, and σ_3 —and also the change in three-dimensional
contraction—Δ —arise at any point of the spherical crustal layer.
This evidently produces not only latitudinal meridional fractures and
folding, but also disjunctive diagonal stresses—to which the block charac-
ter of the crust's structure contributes. The hypotheses of gravitational
differentiation, radioactive heat and others cannot explain the patterns
which are outlined in the chief forms of the world's relief and in its

Card 1/2

The significance of...

S/169/61/000/009/009/056
D228/D304

geographically-correct planetary formations. All this has impelled some
tectonicists to seek the mechanism of the crustal layer's movement in the
irregularity of the earth's rotation. Many Soviet researchers have writ-
ten about the latitudino-meridional direction of planetary folding and
abyssal fractures, and also about their connection with the earth's rota-
tion. Most researchers recognize that abyssal fractures, and also deep
and surface folding, are the consequence of the geographically-directed
planetary compression and stretching of the crustal layer throughout the
whole geologic history of the earth. It would be more correct to explain
tectonic movements, not by one particular hypothesis (while rejecting all
the others, since there are, probably, very many forces acting in the
crustal layer), nor by the arbitrarily permissible compression and stretch-
ing, but by the conjugate deformation of the terrestial ellipsoid in
connection with the irregular axial rotation of the earth in time.
/ Abstracter's note: Complete translation. /

Card 2/2

KRYUKOV, I.I., dotsent; SIRYACHENKO, K.P., inzh.; STOVAS, M.V., dotsent

Using an engineering geodetic method to determine deformation
of transporter bridges. Izv.vys.ucheb.zav.; gor.zhur. 5
no.2:82-85 '62.   (MIRA 15:4)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy
instituta imeni Artema. Rekomendovana kafedroy geodezii.
                    (Transporter bridges)

STOVAS, M.V.; USENKO, D.N.

Briefly about the forces of gravity and inertia of our planet. Izv. AN SSSR. Ser.geol 27 no.11:101-102 N '62.

(MIRA 15:12)

1. Dnepropetrovskiy gornyy institut.
(Gravitation)

ACCESSION NR: AT4032216   S/3089/63/000/005/0085/0092

AUTHOR: Nesterenko, P. G. (Deceased); Stovas, M. V.

TITLE: Change in the gravitational field as one of the causes of terrestrial
seismicity

SOURCE: AN UkrSSR. Mezhduvedomstvenny*y geofizicheskiy komitet. Geofizika i
astronomiya; informatsionny*y byulleten', no. 5, 1963, 85-92

TOPIC TAGS: geophysics, gravity field, seismicity, earthquake prediction

ABSTRACT: Seismicity and volcanic eruptions have long been considered to be un-
related to cosmic phenomena. This geocentric point of view possibly explains why
so little progress has been made in earthquake prediction. This is true although
the relationship between earthquakes and cosmic factors was clearly demonstrated
by A. Perrey in France during the past century. This article fully discusses his
extraordinary papers on this subject (Comptes Rendus des Seances de l'Academie
des Sciences, v. XXXVI, N 12, 1853; LXXXI, N 16, 1875). On the basis of statisti-
cal data for 125 years he demonstrated that the frequency of earthquakes is related
to lunar phases, the distance of the moon from the earth and its culminations,
that earthquakes are more frequent at syzygies than at quadratures and more fre-

Card   1/2

ACCESSION NR: AT4032216

quent at perigee than at apogee. Despite this evidence, Perrey's findings fell
into obscurity. The foreign literature on this subject is reviewed, for example,
in 1958 the Italian geophysicist G. Imbo published data showing that the eruptions
of Vesuvius during 1913-1944 were induced by lunar tides in the earth's crust. The
Russian literature on this subject is reviewed; G. P. Tamrazyan rediscovered
Perrey's first two laws on the basis of Soviet data although he was unfamiliar with
Perrey's studies. Tamrazyan, using data for a large number of regions in the SSSR,
repeatedly confirmed Perrey's findings. The year 1960 was a time of high seismicity
with severe earthquakes in Morocco, Iran, Chile, Albania and Assam, all which can be
related to cosmic conditions. Perrey's first two laws therefore have been confirm-
ed on the basis of abundant evidence. The article concludes with a discussion of
the controversial concept of critical parallels. Orig. art. has: 2 tables.

ASSOCIATION: Dnepropetrovskiy gorny*y institut (Dnepropetrovsk Mining Institute)

SUBMITTED: 00   DATE ACQ: 16Apr64   ENCL: 00

SUB CODE: ES   NO REF SOV: 014   OTHER: 008

Card 2/2

KORN L., A.I., inzh.; KAYUKOV, I.I., dotsent; SERYACHENKO, K.I., inzh.; STOVAS, M.V., dotsent

New method of determining corrections for bends in the metal construction of transporter bridges. Izv. vys. uchelb. zav.; gor. zhur. 6 no.7:87-90 '63. (MIRA 16:9)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy geodezii Dneprepetrovskogo instituta.
(Transporter bridges)

STOVAS, M.V.

Recent young tectonic high in the coastal part of the White
and Barents Seas. Dokl. AN SSSR 153 no.6:1415-1417 D '63.
(MIRA 17:1)

1. Dnepropetrovskiy gornyy institut im. Artema. Predstavleno
akademikom D.V. Nalivkinym.

STOVAS, M.V.

Planetary character of crustal vertical movements. Geol. zhur.
24 no.2:18-31 '64   (MIRA 18:2)

1. Dnepropetrovskiy gornyy institut.

JUMAU, N.V.

Character of recent vertical movements in North America.
Geofiz. i astron. no.8:56-61 '65.

(MIRA 19:1)

1. Dnepropetrovskiy gornyy institut.

ORG.: Dnepropetrovsk Mining Institute (Dnepropetrovskiy gornyy institut)

TITLE: Recent ascending movement of the ocean level in the equatorial zone

SOURCE: AN USSR. Mezhduvedomstvennyy geofizicheskiy komitet. Informatsionnyy byulleten', no. 9, 1966. Geofizika i astronomiya, 73-79

TOPIC TAGS: ocean property, ocean floor topography, submarine relief /

ABSTRACT: There is a great deal of evidence of submersion of the land in the equatorial regions of the Atlantic, Pacific, and Indian Oceans. Reef-building, which requires prolonged sinking, is found throughout these regions. Submarine canyons on the shores of Africa are thought to be due to subaerial erosion. There are records in chronological history of the submergence of Ceylon, and submerged villages or forests are visible in places. Studies of submergence on the east coast of North America give the average subsistence rate from 1930 to 1945 as 5 to 7 mm/year, reaching 15 mm/year as a maximum. Carbon-14 dating of submerged plant material gave an average rate of 0.8 to 1.6 mm/year in New England. The California Islands are believed to be the tops of submerged ridges. Additional evidence of submergence is a field of positive gravity anomalies in the basins of the East and West Indies, the Sea of Band,

Card 1/5

the Caribbean Sea, the Gulf of Mexico, and the Cuban Sea. Relative submergence can be shown by observations of sea levels in the equatorial zone, where there is a tendency toward general raising of the sea level. The results of this investigation are shown in the accompanying table.

Station	Years	Apparent increase in level, cm	Speed of increase in level, mm/yr	
			Apparent	From Levelling
Balboa, Panama Canal Zone. Pacific Ocean	1909-1961	+5.978	+2.3	+2.05
Cristobal, Panama Canal Zone. Atlantic Ocean	1909-1961	+2.558	+1.1	+0.91
Islands of Naos, Gulf of Panama. Pacific Ocean	1950-1960	+2.990	+5.0	+5.68
Cartagena, Colombia. Caribbean Sea	1949-1960	+3.202	+5.3	+4.76
Puerto Cortes, Honduras. Caribbean Sea	1948-1960	+7.229	+10.3	+11.16

Card 1/2

Station	Years	Apparent increase in level, cm	Speed of increase in level, mm/yr	
			Apparent	From Leveling
Port au Prince, Haiti, Caribbean Sea	1950-1960	+5.161	+10.3	--
Puerto Plata, Dominican Republic	1950-1959	+6.405	+17.8	--
Guantanamo Bay, Cuba	1944-1960	+2.349	+2.6	--
Progreso, Mexico, Gulf of Mexico	1952-1961	+1.464	+2.9	--
Tampico, Mexico, Gulf of Mexico	1952-1960	+1.983	+4.0	--
Vera Cruz, Mexico, Gulf of Mexico	1953-1961	+2.836	+5.7	--
Coatzacoalcos, Mexico, Gulf of Mexico	1952-1959	+0.488	+1.2	--
La Union, Salvador, Pacific Ocean	1948-1960	+4.606	+7.7	+5.85
San Diego, Pacific Ocean	1927-1960	+3.202	+1.9	+2.40
Bermuda Islands, Georgia	1933-1959	+7.777	+6.0	+8.14
Puntarenas, Pacific Ocean	1942-1960	+11.560	+11.6	+12.17

Card 3/5

Buenaventura. Pacific Ocean	1941-1960	+1.281	+1.6	+1.42
La Libertad. Ecuador. Pacific Ocean	1950-1960	+2.959	+4.9	+4.35
Talara. Peru. Pacific Ocean	1942-1960	+1.677	+1.7	+1.54
Callao. Peru. Pacific Ocean	1942-1955	-1.281	-1.8	-1.82
Salvador. Brazil	1949-1960	+1.892	+3.2	+2.93
Imbituba. Brazil	1949-1960	+1.159	+1.9	+2.43
Recife. Brazil	1949-1960	-2.44	-4.1	-4.01
Belem. Brazil	1949-1960	+0.671	+1.1	+0.92
Fortaleza. Brazil	1949-1957	+7.625	+15.3	--
Takoradi. Ghana. Gulf of Guinea	1930-1961	+4.00	+2.5	+2.53
Karachi. Pakistan. Arabian Sea	1958-1964 1894-1920	+1.86	+0.7	+0.78
Bombay (Apollo-Bandar). Arabian Sea. India	1878-1961	+5.80	+1.4	+1.31
Bhavnagar. Arabian Sea	1937-1955	+13.85	+13.0	+17.41
Madras. Bay of Bengal	1880-1960	+3.477	+1.9	+1.57
Khurdapuri. Bay of Bengal	1882-1920	-8.72	-4.4	-4.53

Station	Years	Apparent increase in level, cm	Speed of increase in level, mm/yr	
			Apparent	From Level-ling
Di... and Harbor. Bay of Bengal	1948-1961	+1.89	+3.2	+0.75
Calcutta. Bay of Bengal	1932-1961	+1.189	+0.9	--
Sugar Islands. Bay of Bengal	1982-1885	+14.03	+0.5	--
	1937-1942	+19.31	+1.0	--
	1945-1956	+33.34	+0.9	--
Port Blair. Andaman Islands. Indian Ocean	1880-1920	+3.752	+1.3	+1.8
Rangoon. Burma	1880-1960	+3.29	+0.80	+0.13
Bangkok Bar. Gulf of Siam	1940-1956	+1.50	+1.8	+2.57
Ko-Chang. Thailand	1940-1956	+0.47	+0.5	+0.05
Manila. Philippine Islands South China Sea	1901-1910	+4.48	+2.4	--
	1926-1938	+1.58	+1.4	--
	1948-1958	+6.07	+2.2	--
Honolulu. Hawaiian Islands	1905-1936	+2.531	+1.6	+1.83
Aden	1880-1933	+0.18	+0.06	-0.06
	1937-1959	+0.52	+0.5	--

SUB CODE: 03/   SUBM DATE: none/   ORIG REF: 020/   OTH REF: 013

Card 5/5

ACC NR: AP6029096   SOURCE CODE: UR/0116/66/000/006/0047/0049

AUTHOR: Shikhov, V. Yu. (Engineer); Stovba, L. I. (Engineer)

ORG: none

TITLE: Using electronic computers for designing metal-cutting operations in multitool machining

SOURCE: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 6, 1966, 47-49

TOPIC TAGS: metal machining, electronic computer, special purpose computer

ABSTRACT: The shortcomings of linear mathematical models and methods of linear programming are discussed. A new method that obviates these shortcomings was developed in the Rostov Institute of Farming Machinery and the Rostov University. The new "cyclic correction" method includes techniques formerly used for approximately finding the optimal set of machines, a share of the

Card 1/2   UDC: 681.142.353

ACC NR: AP0021976

operation cost, which depends on metal-cutting conditions, is adopted as an optimizing criterion. An analytical expression of the target function (given in the article) is bounded by: productivity, permissible torque, tool strength, machine-part strength, machine ratings, machine kinematics. A source plan of machining is step-by-step corrected by the above method which, among other things, eliminates the errors due to preliminary estimation of set-up tool endurance. Orig. art. has: 1 figure and 6 formulas.

SUB CODE: 13, 09 / SUBM DATE: none

Card 2/2

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med.nauk, red.; KRYZHANOVSKAYA, V.V., kand.med.nauk, red.; MARTY-
NYUK, V.Z., prof., red.; PETROV, Yu.L., kand.med.nauk, red.;
POZNANSKIY, S.S., kand.med.nauk, red.; STOVBUN, A.T., kand.med.
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           (BLOOD radiation eff.)

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    LAKHNO, Ye.S., red.; MEDVED', L.I., red.; STOVBUN, A.T.,
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18 no.4:63-65 Jl-Ag '56.   (MLRA 9:9)

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            with otoantritis (Rus))
        (OTITIS, in infant and child,
            otoantritis in dysentery (Rus))
        (MASTOID diseases,
            otoantritis in dysentery in inf. (Rus))