L 18419-63   EWP(q)/EWT(m)/BDS   AFFTC/ASD   JD/WB
ACCESSION NR: AP3005800   S/0136/63/000/008/0066/0069

AUTHORS: Biryukova, L. V.; Neroslavskaya, L. L.   56

TITLE: Corrosion of titanium in acid and salt solutions

SOURCE: Tsvetnyye metally, no. 8, 1963, 66-69

TOPIC TAGS: titanium, HCl, acid solution, salt solution, corrosion,
sulfuric acid, nitric acid, acetic acid, formic acid, KCl, NaCl,
magnesium chloride, barium chloride, Ti

ABSTRACT: The degree of oxidation of titanium surface under various
conditions has been studied. Special attention was given to the pre-
paration of samples. The results of investigation showed that the
corrosion rate depends largely upon the temperature and the length
of its exposure to the air. The dependence of titanium corrosion
upon the duration of its exposure to hydrochloric acid solutions at
intervals between 1 and 24 hours, using various concentrations, has
been investigated. It was found that titanium dissolved even at con-
centrations of 0.5% HCl; however, the dissolution is very slow. The

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L 18419-63
ACCESSION NR: AP3005800 0

dissolution rate increases noticeably at concentrations of 3 to 6% HCl
and at 7% HCL, it shows a sharp increase. It was shown that tempera-
ture greatly effects the titanium dissolution rate in solutions of 1
to 10% HCl. The most aggressive acid was found to be H_2SO_4, then HCl

and finally HNO_3. The solubility of titanium in organic acids such as

acetic and formic is very slow. $CaCl_2$ and $BaCl_2$ solutions at room

temperature showed a great effect on titanium corrosion. KCl and
NaCl in acid solutions did not show an effect on titanium. However,
$MgCl_2$, $BaCl_2$ and $CaCl_2$ increased corrosion considerably. Orig. art.

has 3 tables and 4 figures.

ASSOCIATION: none

SUBMITTED: 00   DATE ACQ: 06Sep63   ENCL: 00

SUB CODE: ML   NO REF SOV: 001   OTHER: 005

Card 2/2

ABRAMOVSKIY, I.B.

Gruzopod"emnye i transportnye ustroistva. Utverzhen v kachestve uchebnika dlia metallurgicheskikh tekhnikumov. Moskva, Metallurgizdat, 1950. 383 p. illus.

Bibliography: P. 328.

Hoisting and conveying devices.

DLC: TJ1350. A37

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

BRONSHTEYN, I.I., red.; SAAKYAN, A.Ye., red.; GLUPUSHKIN, P.M.,
        red.; SHCHERBAKOV, D.P., red.; GORSHKOV, P.N., red.;
        NEROSLAVSKIY, L.M., red.

[Improvement of the manufacture of wires and cables with
rubber insulation; materials] Usovershenstvovanie proiz-
vodstva provodov i kabelei s rezinovoi izoliatsiei; sbor-
nik materialov. Moskva, Energiia, 1964. 263 p.
                                        (MIRA 18:8)
1. Otraslevoye nauchno-tekhnicheskoye soveshchaniye po
voprosam usovershenstovaniya proizvodstva provodov i ka-
beley s rezinovoy izolyatsiyey. 11th, Perebory Rybinskiye,
1963. 2. Nauchno-issledovatel'skiy institut kabel'noy pro-
myshlennost. Moskva (for Bronshteyn).

NEROVETSKIY, A. I.

42236. NEROVETSKIY, A. I. Razmeshcheniye predpriyatiy stroyindustrii. V sb: Nauch.
Soobshch. (UKr. nauch inzh.-tekhn. o-vo stroiteley. Kafedra stroit. Proizvodstva
kievsk. Inzh.-stoit. In-ta). Kiev. 1948, c. 3-13

So: Letopis' Zhurnal'nykh Statey, Vol. 47, 1948.

NEROVETSKIY, A. I.

NEROVETSKII, A. I. - Deystv. chl. Akademii arkhitektury USSR Prof. i
KASPIN, L. A. - Kand. Ekonom. nauk i MATVEEV, F. P. - Kand. ekonom, nauk

Institut Stroitel'noy Tekhniki akademin spkhitektury USSR

Konstruktsii i ikh sonirovaniye v sel'skom I kolkhoznom stroitel'stve
Page 77

SO: Collection of Annotations of Scientific Research Work on Construction, com-
pleted in 1950, Moscow, 1951

NEROVNOV, Vasiliy Yakovlevich, shofer; KORSAKOV, Aleksandr Timofeyevich,
shofer; NIKOLENKO, V.F., red.; DONSKAYA, G.D., tekhn.red.

[Operation of motortrucks] Ekspluatatsiia gruzovogo avtomobilia.
Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i
shosseinykh dorog RSFSR, 1960. 69 p.   (MIRA 13:5)

1. 5-ya avtobaza Glavmosavtotransa.(for Nerovnov, Korsakov).
                    (Motortrucks)

NEROVNYA, L.K.

NEROVNYA, L.K.

Self-demodulation of reflected radio waves. Vest. Mosk. un. Ser. mat.
mekh., astron., fiz., khim. 11 no.2:99-102 '56.   (MIRA 10:12)

1. Kafedra fiziki atmosfery Moskovskogo gosudarstvennogo universiteta.
(Electric waves)

9(?)

AUTHOR: Nerovnya, L.K.   SOV/55-58-2-12/35

TITLE: The Absorption of Radio Waves in Non-Stationary Processes and
                 Non-Linear Effects (Pogloshcheniye radiovoln pri nestatsionar-
                 nykh protsessakh i nelineynyye effekty)

ABSTRACT: During the propagation of electromagnetic waves in ionized
                 media, especially in the ionosphere, an increase of the ther-
                 mal energy of the motions of electrons takes place at the ex-
                 pense of an irreversible loss of energy of the wave. The loss
                 of energy arises during instationary processes in the medium
                 (according to the author this was observed for the first time
                 by M.A. Bonch - Bruyevich [Ref 1] in 1932) and caused by the
                 dependence of the wave absorption on the wave amplitude. The
                 author considers some special cases of these phenomena, since
                 the mathematical treatment of the general case is too com-
                 plicated. The obtained results coincide with the well-known
                 observations of Cutolo [Ref 3] , Morto [Ref 11] , Baily
                 [Ref 8-10] etc.
                 There are 10 figures, and 22 references, 5 of which are Soviet,

Card 1/2

The Absorption of Radio Waves in Instationary   SOV/55-58-2-12/35
Processes and Non-Linear Effects

        11 English, 2 American, 3 Italian, and 1 German.

ASSOCIATION: Kafedra fiziki atmosfery (Chair of Atmosphere Physics)[Moscow Univ.]

SUBMITTED: June 3, 1957

Card 2/2

87329

9.9100 (also 1046)

3/058/60/000/012/006/011
A001/A001

AUTHOR: Nerovnya, L. K.

TITLE: Self-demodulation of Reflected Radiowaves

TEXT: Using the elementary theory of non-linear effects in the ionosphere,
the author calculates the dependence of wave modulation depth on the power of a
transmitting station and operation frequency. It is shown that the maximum ef-
fect takes place when operation frequencies are close to local gyromagnetic fre-
quency or the transmitter operates at very low frequencies. The value of frequen-
cy of electron collisions in the E-layer can be easily estimated from the data of
such an experiment.

                                               L. K. Nerovnya

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

ACC NR: AP7002205   SOURCE CODE: UR/0203/66/006/006/1120/1122

AUTHOR: Kashin, A. A.; Klimanov, F. P.; Kushnerevskiy, Yu. V.; Mirkotan, S. F.;
Nerovnya, L. K.

ORG: Moscow State University, Physics Department (Moskovskiy gosudarstvennyy
universitet, Fizicheskiy fakul'tet); Institute of Terrestrial Magnetism, Ionosphere,
and Radio Wave Propagation, AN SSSR (Institut zemnogo magnetizma, ionosfery i
rasprostraneniya radiovoln AN SSSR)

TITLE: Drift of small-scale inhomogeneities at Mirnyy (Antarctica)

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 6, 1966, 1120-1122

TOPIC TAGS: ionosphere, ionospheric drift, ionospheric inhomogeneity, ionospheric
radio wave

ABSTRACT: Observations of ionospheric drifts were organized at Mirnyy during the
Eighth Antarctic Expedition. Measurements of the motion of small-scale
inhomogeneities were made using the short-range reception method. "Delta"-
type antennas with an active load of 600 ohm served as the receiving
antennas. To reduce the effects of polarization and radii noise on the
measurements, the receiving antennas were placed in parallel. Signals
from the receiving antennas were fed to an antenna switch through a
matching balancing transformer is a single-wire hf cable. A wide-band

Card 1/3   UDC: 550.388.2

ACC NR: APT002205

rhombic antenna served as the transmitting antenna. The drift-measuring system was an ordinary ionospheric station operating at fixed frequencies. The transmitter, a pulsed wide-band power amplifier, had the following characteristics: pulse width, 200 μsec; repetition frequency, 50 cps; pulse power 1—1.5 kw; and frequency range, 1.5—18.0 Mc. Operation of the entire system was controlled by a synchronizer. The receiver, a superheterodyne unit, had the following characteristics: frequency range, 1.5—18.0 Mc; transmission band, 15 kc; and sensitivity for a 2:1 S/N ratio, 2 μv. At the input of the receiver an electronic switch successively coupled antennas 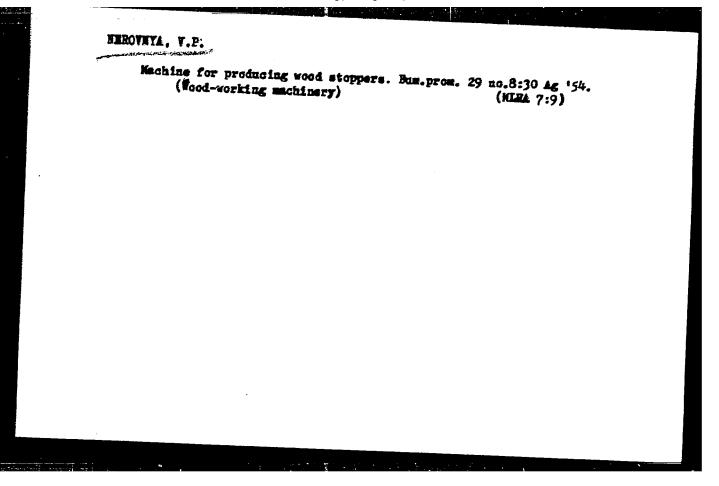to it. Received and amplified signals were fed to an oscillograph and subsequently photographed at a rate of 13 cm/sec from its screen.

The drift of small-scale inhomogeneities in the E and F2 layers was observed from March to December 1963. It was found that drift velocity in the two layers varied from 40 to 400 m/sec, with average values of 180 and 214 m/sec, respectively. Drift was primarily to the northwest and southeast.

The results of a harmonic analysis of annual data on ionospheric drift indicated that for each of the two layers there was a constant component of the drift velocity which had large amplitude and was directed toward the equator (i.e., was almost perpendicular to the auroral zone). The vectors of diurnal and semidiurnal drift components were found to rotate counter clockwise in the E layer and clockwise in the F2 layer; both velocity vectors were larger in the F2 layer than in the E layer. The semidiurnal component of the drift velocity prevailed in the E layer, while the diurnal component in the F2 layer.

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ACC NR: AP7002205

Concerning the relationship between drift velocity and magnetic activity
it was revealed that this relationship was almost absent in the E layer,
while it manifested itself clearly in the F2 layer: the drift velocity
increased sharply with an increase in the K index. Orig. art. has: 5 fig-
ures.   [WA-3]

SUB CODE: 20/ SUBM DATE: 18Nov65/ ORIG REF: 002/ OTH REF: 003/ ATD PRESS: 5113

Card   3/3

NEROVNYA, V.P.

Machine for producing wood stoppers. Bum.prom. 29 no.8:30 Ag '54.
(Wood-working machinery)
(MLRA 7:9)
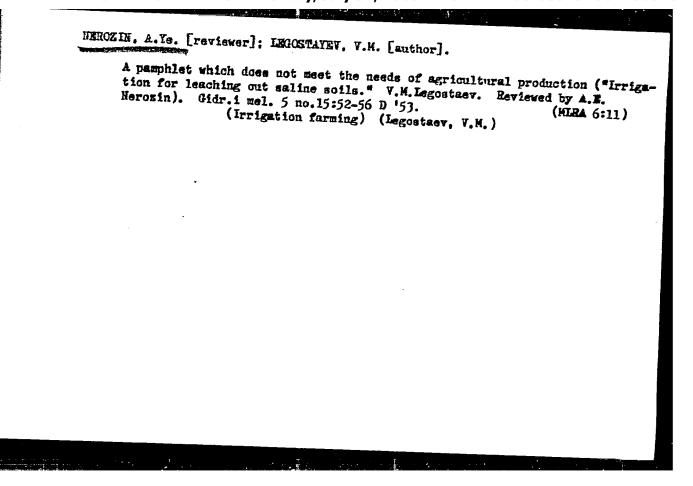
NEROVNYA, V.P., elektrik

Repair of PN-3-85 and PB-61 pulverized coal feeder motors. Energetik
12 no.7:30-32 Jl '64.

(MIRA 17:9)

NEROVNYY, S.V., starshiy elektromekhanik

Change the servcing procedure of control locks for switches.
Avtom., telem. i sviaz' 2 no.10:42 O '58.

(MIRA 11:10)

1.Stalingradskaya distantsiya signalizatsii i svyazi Privolzhskoy
dorogi.

(Railroads—Switches)

NEROZIN, A.Ye. [reviewer]; LEGOSTAYEV, V.M. [author].

A pamphlet which does not meet the needs of agricultural production ("Irriga-
tion for leaching out saline soils." V.M.Legostaev. Reviewed by A.E.
Nerozin). Gidr.i mel. 5 no.15:52-56 D '53.
            (Irrigation farming) (Legostaev, V.M.)   (MIRA 6:11)

NEROZIN, A. Ye.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr. 1954)

Name	Title of Work	Nominated by
Nerozin, A. Ye.	"Cotton Growing" Textbook	Ministry of Agriculture Uzbek SSR

SO: W-30604, 7 July 1954

14-57-7-14835D

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 7,
                   p 101 (USSR)

AUTHOR: Nerozin, A. Ye.

TITLE: Increase of Effectiveness, Calculation of Quantities,
             and Classification of Flushing Techniques on Irrigated
             Saline Soils (Povysheniye effektivnosti, raschet norm
             i differentsiatsiya promyvok zasolennykh oroshayemykh
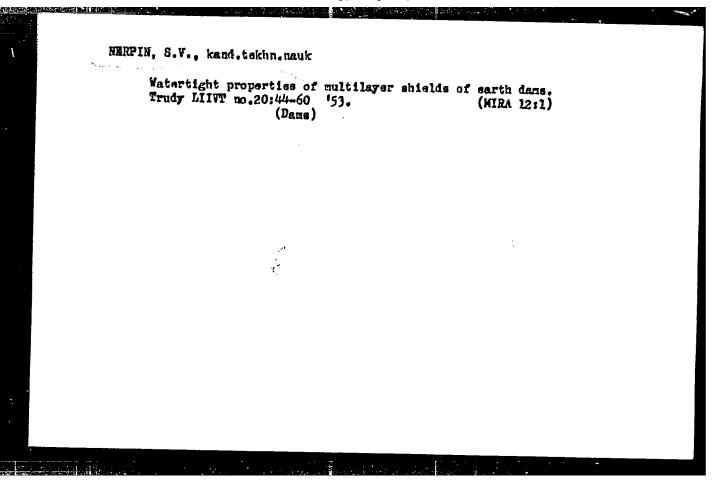   zemel')

ABSTRACT: Bibliographic entry on the author's dissertation for
             the degree of Candidate of Agricultural Sciences,
             presented to Tashkentsk. s.-kh. in-t (Tashkent
             Agricultural Institute), Tashkent, 1957

ASSOCIATION: Tashkentsk. s.-kh. in-t (Tashkent Agricultural
             Institute)

Card 1/1

NERPIN, S.V., kand.tekhn.nauk

Watertight properties of multilayer shields of earth dams.
Trudy LIIVT no.20:44-60 '53.   (MIRA 12:1)
                    (Dams)

Authors   : Deryagin, B.V., Memb. Corresp. of Acad. of Sc. USSR; and Nerpin, S.V.

Title   : Equilibrium, stability and kinetics of free liquid films

Periodical   : Dok. AN SSSR 99/6, 1029-1032, Dec 21, 1954

Abstract   : The method and mathematical formulas applied in determining the equilib-
rium, stability and kinetics of free liquid films, are described. The
stability of a liquid film investigated in this report pertains to the
rupture or sharp increase in the thickness of the film down to such val-
ues where the stability of the film can be secured by its elasticity conn-
ected with the propertis of adsorption mono-layers. Equilibrium of the
film was found to be of a timely nature depending upon the kinetic process
of slow settling of the film up to a point when it reaches a critical
thickness at which it loses its stability. Eight references: 7-USSR and
1-USA (1935-1954). Graph.

Institution: Acad. of Sc. USSR, Inst. of Phys. Chem. and Institute of Water Transport
Engineers, Leningrad

Submitted: July 7, 1954

USSR/Geophysics - Subsurface Moisture   FD-2742

Card 1/1   Pub 41 - 3/16

Author   : Nerpin, S. V., Leningrad

Title   : Equilibrium of pellicular and intersticial moisture in a clay
                 strata

Periodical   : Izv. Ak SSSR, Otd. Tekh. Nauk 5, 50-54, May 1955

Abstract   : Discusses mathematical and experimental methods of deter-
                 mining the moisture potential of a sub-surface clay strata.
                 The mathematical method is presented in length as it is new
                 and is proved by experimental data. Graphs and formulae.
                 Five references, 4 USSR.

Institution   :

Submitted   : November 1, 1954

15-57-7-9958

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7,
            p 178 (USSR)

AUTHOR: Nerpin, S. V.

TITLE: Balance of Condensed Moisture and Water Vapor in
            Soils and Earths (Ravnovesiye kondensirovannoy i
            paroobraznoy vlagi v pochvakh i gruntakh)

PERIODICAL: Tr. Leningr. in-ta inzh. vod. transp., 1955, Nr 22,
            pp 109-118

ABSTRACT: Bibliographic entry
Card 1/1

NERPIN, S. V.

USSR/Physics - Hydromechanics

Card 1/1   -   Pub. 22 - 4/50

Authors   : Nerpin, S. V., and Deryagin, B. V., Member-corresp. of the Acad. of Scs. of the USSR

Title   : The kinetics of flow and stability of thin layers of liquid along a solid base taking into account a solvate film (of the liquid) as a special phase

Periodical : DOK. AN SSSR 100/1, 17-20, Jan. 1, 1955

Abstract   : A mathematical analysis of flow and stability of thin layers of a liquid along a solid base is presented. The analysis is made from the point of view of the consideration of thin layers of a liquid as films of the latter is a special phase (a part of this liquid that lost its fluidity). Such a concept makes the analysis easier. Results of the analysis can be applied to the solutions of such problems as "the movement of moisture in the ground," etc. Six references: USSR (1937-1945). Graphs.

Leningrad Institute of Water Transportation Engineers

Submitted :   ....

NERPIN, S. V., ZOVAYEVA, N. N., DERYAGIN, B. V., and MELNIKOVA, M. K. (USSR)

"Theory of equilibrium and migration of soil moisture at various
moisture contents."

report submitted for the 6th Intl. Congress of soil Science,
Paris, France
28 August 1956

NERPIN, S. V.

Name: NERPIN, S. V.

Dissertation: Hydromechanics of thin layers

Degree: Doc Tech Sci

DEFENDED AT
Association: Leningrad Inst Water Transportation Engineers

PUBLICATION
Defense Date, Place: 1956, Leningrad

Source: Knizhnaya Letopis', No 52, 1956

AUTHORS: Nerpin, S. V. , Bondarenko, N. F.

TITLE: Investigation of the Mechanical Properties of Thin Layers of Liquid
            by Means of the Filtration Method (Issledovaniye mekhanicheskikh
            svoystv tonkikh sloyev zhidkosti metodom fil'tratsii)

PERIODICAL: Tr. Leningr. in-ta inzh. vod. transp. , 1956, Nr 23, pp 36-42

ABSTRACT: Bibliographic entry

Card 1/1

MEL'NIKOVA, M.K.; NERPIN, S.V.

A study of equilibrium conditions of moisture in dispersion systems
in the presence of a gravitational field. Dokl.AN SSSR 106 no.4:
615-618 F '56.   (MIRA 9:6)

1.Predstavleno akademikom A.F.Ioffe.
      (Fluid mechanics) (Capillarity)

Nerpin, S.V.

YEFREMOV, I.F.; NERPIN, S.V.

Kinetic theory of gelatinization [with summary in English]. Koll. zhur. 19 no.6:757-758 N-D '57.   (MIRA 11:1)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.
                              (Gelation)

NERPIN, S V

AUTHOR: YEFREMOV,I.F., NERPIN,S.V.   20-4-35/61
TITLE: The Problem of the Construction of Kinetic Theory of Glutinization
             Processes. (K voprosu o postroyenii kineticheskoy teorii pro-
             tsessov zhelatinirovaniya, Russian)
PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 4, pp 846 - 849
             (U.S.S.R.)

ABSTRACT: The problem of the development of gels and pastes has attracted
             scientists' attention already since a relatively long time.
             Opinions on the nature of these systems differ considerably.
             It can be shown that the formation of gel can be explained by
             the fixing of colloid particles at relatively far distances
             by means of telekinetic powers of molecular and ionelectrostatical
             origin. There follows the possibility to come to the analogy bet-
             ween the transition of substances built up from molecules from
             liquid to solid condition and the gelatination of watered brines.
             In the latter case the powers of molecule attraction and of the
             ion-electrostatic pushing off appear among the colloid particles
             instead of attraction and pushing off powers among the single
             molecules. The existence of a potential barrier and of a lower
             energetic level beyond this barrier for the case of interaction
             of the colloidal particles refers to the possible way of relax-
             ation. By starting from these conceptions the nature of the
Card 1/4   dislocation elasticity can be ascertained, which forms one of the

The Problem of the Construction of Kinetic
Theory of Glutinization Processes.

20-4-35/51

principle characteristics of the gelatinated system, and the
conduct of the colloid particles in the interior of the gel can
be investigated. For this purpose not only the knowledge of the
interaction in a single pair of particles is necessary but also
of the action of its entity which forms the quasicrystalline gel-
grate. The mutual fixation of the particles at distances which
correspond to the position of the potential cavities, must de-
termine the minimum value of the potential energy of the system
as a whole at the same time; the minimum value corresponding to
the condition $d\,U_{Syst} / d\,h = 0$. In the case of reversible
elementary inclination (dislocation) of the system this con-
dition is interrupted and the energetic level of the system will
rise, which corresponds to the known relation $dF = dR$ (R - work
of the exterior powers, and F - free energy) and thus the applic-
ation of exterior dislocation forces is necessary. In the case
of small inclination angles it is true that $\varphi dR = \tau d\varphi$ (τ - dis-
location tension).

Consequently $\tau = \dfrac{d\,E}{d\varphi_d}$, and the dislocation elasticity $G = \dfrac{d\tau}{d\varphi} = \dfrac{d^2 F}{d\varphi^2}$

In this case the system will behave as a gel if the duration of the
relaxation of the colloid particles in the processes of their
agglutination as well as in the case of transition to a vacant

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The Problem of the Construction of Kinetic Theory of ~~20-4-35/61~~
Glutinization Processes. ~~XXXXXXXXXX~~

spot of the quasi-crystalline grate will considerably exceed
the duration of the exterior influences. In the case of non-
fulfilment of one of these conditions the system will either
decay or its elastic properties will be marked by the liquid ones.
Furthermore, the character of the potential curve of a "sample"
particle as approximation value is investigated, the "sample"
particle having two firmly established neighbours A and C. Here
the depth of the potential cavity U, which is conditioned by
the fixing   of the particles in the knots of the grate, will be
considerably larger than in the case of an interaction of two
single particles. In the case of a collective interaction, the
potential cavities for intermediate particles will exist even
if the powers of pushing off on any distances will exceed the
powers of attraction. It is natural that cavities of this kind
can only lead to a mutual fixing   of the particles of a col-
loidal system on certain distances if the environments have a
confined volume, which fixes the maximum distance of the exterior
particles of the disperse phase. Moreover, a certain minimum
concentration is required, for otherwise the depths of the cor-
responding cavities as compared with the energy of BROWN's motion
will be too small and the fixing of the particles will not take

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The Problem of the Construction of Kinetic Theory   20-4-35/51
of Glutinization Processes.

place. In the case of a non-confined space or in the case of a
confined space but of a concentration under the minimum, a gelatin-
ation is only possible in the case of the existence of cavities
with a negative value of energy and it will have a local character
(flocculation). Formulas are quoted for: the general interaction
between two plates, the interaction of two semi-spaces separated
by a cleft and for the case of the distance between the particles
being considerably smaller than the thickness of the ion atmosphere.
The initially described reflections can also be applied for systems
such as highly concentrated emulsions and foams. In the case of
foamy systems, however, the inclination (dislocation) is not only
accompanied by the deformation of layers but also by the modification
of the specific surface. (4 illustrations, 7 citations from Slavic
publications)

ASSOCIATION: Leningrad Technological Institute "LENSOVET"
PRESENTED BY: A.N.FRUMKIN,Member of the Academy
SUBMITTED: 16.11.1956
AVAILABLE: Library of Congress

Card 4/4

NERPIN, S. V.; CHURAYEV, N. V.

"Kinetics of moisture evaporation from capillary-porous bodies."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Agri Physics Sci Res Inst, Kalinin Peat Inst.

AUTHORS: Nerpin, S. V., Bondarenko, N. F.   20-114-4-42/63

TITLE: An Investigation of the Mechanical Properties of Thin Liquid
                  Layers in Concentrated Emulsions by the Filtration Method
                  (Issledovaniye mekhanicheskikh svoystv tonkikh sloyev
                  zhidkosti v kontsentrirovannykh emul'siyakh metodom fil'tratsii)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4,
                  pp. 833-836 (USSR)

ABSTRACT: Previous investigations have shown that the normal viscosity
                  in low volatile, non-polar liquids in conserved up to the
                  hard surface, while in polar ones this is the case up to the
                  limit of the solvate layers. For the study of the mechanical
                  properties of the volatile liquids (electrolytic aqueous
                  solutions) the authors have used a filtration viscosimeter.
                  As small pore filters they used highly concentrated benzol-
                  water emulsions, stabilized with saponin. The system is well
                  visible in the microscope. If the temperature drops to 0° and
                  $+5^\circ C$, the benzol drops become hard, while the water layers
                  remain liquid. The computations for saturated concentrated
                  emulsions, prepared with a saponin solution of 10% in water,
Card 1/4   have shown that the average thickness of the water layers

An Investigation of the Mechanical Properties of Thin Liquid 20-114-4-42/63
Layers in Concentrated Emulsions by the Filtration Method

is 10^{-5}. The small thickness of the layers assures the low
value of the viscosity tensions in the liquid during the
filtration at easily measurable drops of pressure. Thus it is
made possible to discover minute plastic displacement tensions
in the liquids, which do not subordinate themselves fully to
Newton's Law; they rather follow the well-known law of
Schvedov-Bingham. The principal conclusions of the tests
indicate that the water contained in the dropseparating thin
layers possesses a normal viscosity which is also proper to
a liquid in the volume. Besides that, traces of plasticity
may be found. These conclusions are true for the layers which
separate the liquid drops and for those which separate the
hardened benzol particles from one another. In order to
examine the influence of the electrolytic content of the
aqueous solution upon the thickness of the layers, a series
of tests was made with emulsions which had been prepared
with aqueous solutions with different electrolytic content
(NaCl), that is from 10^{-4} N to 10^{-1} N. The results show that
at an increase of the electrolyte concentration the filtration
flow decreased. The dispersion of the system increases. To

Card 2/4   this corresponds the diminution of the average thickness of

An Investigation of the Mechanical Properties of Thin Liquid 20-114-4-42/63
Layers in Concentrated Emulsions by the Filtration Method

the water layers. The decrease in the permeability of the
emulsion samples takes place only up to a certain con-
centration value of the electrolyte of a quantity of 10^{-2}.
At higher concentrations the filtration flow again increases.
The explanation is as follows: Beside the decrease in the
thickness of the water layers at an increase of the concen-
tration of the electrolyte there also occurs a decrease in the
limit value of the splitting pressure developed by them. These
two factors deteriorate the conditions for the breaking up
of the drops, as the mobility of the liquid decreases with
a diminution of the layers in them. This reduces the
possibility of the formation of new separation layers between
the drops, while the decreasing power barrier which prevents
the confluence of the drops limits the degree of dispersion.
The deterioration of the emulgation conditions has to bring
about a detention of the aqueous solution in "Gibbs'
thickenings" and an increase of their share in the filtration,
which causes an increase in the permeability of the system.
The equilibrium of the layers has a thermodynamical character.

Card 3/4   There are 3 figures, 1 table, and 8 references, 8 of which

·An Investigation of the Mechanical Properties of Thin Liquid 20-114-4-42/63
Layers in Concentrated Emulsions by the Filtration Method

are Soviet.

ASSOCIATION: Leningradskiy institut inzhenerov vodnogo transporta
                (Leningrad Institute for Water Transport Engineers)

PRESENTED: January 24, 1957, by A. N. Frumkin, Member, Academy of
                Sciences, USSR

SUBMITTED: January 22, 1957

Card 4/4

NERPIN, S. V.

AUTHORS: Kotov, A.I. and Nerpin, S.V. (Leningrad)

TITLE: Water-resistant Properties of Clay Soils and Earths and
the Nature of the Initial Percolation Gradients
(Vodoupornyye svoystva glinistykh pochv i gruntov i
priroda nachal'nykh gradiyentov fil'tratsii)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh
Nauk, 1958, Nr 9, pp 106 - 109 (USSR)

ABSTRACT: According to Darcy's law, the percolation coefficient R
is equal to V/J , where V is the mean flow velocity and J
is the pressure gradient. Experimentally, it is found that
percolation only begins when a certain minimum pressure
gradient is established and percolation at low pressure
gradients is less than that predicted by Darcy's law. An
attempt is made in the paper to account for these
deviations from the law by means of a model consisting of
an assemblage of tortuous capillaries containing a non-
Newtonian fluid. The equations for flow of the fluid are
set up and solved and curves are obtained (Figure 1) for
dependence of the flow velocity and percolation coefficient
on pressure gradient. Experiments on clays of different
porosities (Figure 2) show that the shape of the observed
curves of the percolation coefficient against pressure
Card1/2

SOV/24-58-9-15/31

Water-resistant Properties of Clay Soils and Earths and the Nature
of the Initial Percolation Gradients

gradient are similar to those predicted theoretically.
The effect of porosity is also accounted for. Thanks
are expressed to B.V. Deryagin for discussion of the
results and to S.A. Roza for supply of apparatus.
There are 3 figures and 5 references, 3 of which are
Soviet and 2 English.

ASSOCIATION: Leningradskiy institut inzhenerov vodnogo transporta
(Leningrad Institute of Water Transport Engineers)

SUBMITTED: April 30, 1957

Card 2/2

NERPIN, S. V.

NERPIN, S. V.;

"The hydromechanics and thermodynamics of thin films and their influence on soil properties."

report presented at the Fourth All-Union Conference on Colloidal Chemistry, Tbilisi, Georgian SSR, 12-16 May 1958 (Koll zhur, 20,5, p.677-9, '58, Tashkent, A.B)

NERPIN, S.V., doktor tekhn.nauk, prof.; KOTOV, A.I., kand.tekhn.nauk, dotsent; RAYEV, V.A., inzh.

Nature of the compressibility of clayey soils. Trudy LITYT no.26: 105-111 '59. (MIRA 14:9)

(Clay)

NERPIN, S.V. and DERYAGIN, B.V.

"Soil Mechanics."

report to be submitted at the Symposium on Powders in Industry, London, 29-30 Sep 1960.
Institute of Water Transport Engineers, Leningrad, for Nerpin.

NERPIN, S.V.; MEL'NIKOVA, M.K.

Erroneous theory of the movement of soil moisture. Pochvovedenie
no.2:71-75 F '60.   (MIRA 15:7)

1. Agrofizicheskiy institut Vsesoyuznoy Akademii sel'skokhozyaystven-
nykh nauk imeni Lenina.
                          (Soil moisture)

GLOBUS, A.M.; NERPIN, S.V.

    Mechanism of soil moisture movement toward the freezing horizon. Dokl.AN SSSR 133 no.6:1422-1424 Ag '60.

                                    (MIRA 13:8)

    1. Agrofizicheskiy nauchno-issledovatel'skiy institut Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina. Predstavleno akad. A.F.Ioffe.
       (Frozen ground) (Soil moisture)

NERPIN, S.V

42

PHASE I BOOK EXPLOITATION   SOV/5590

Konferentsiya po poverkhnostnym silam. Moscow, 1960.

Issledovaniya v oblasti poverkhnostnykh sil; sbornik dokladov na
   konferentsii po poverkhnostnym silam, aprel' 1960 g. (Studies
   in the Field of Surface Forces; Collection of Reports of the
   Conference on Surface Forces, Held in April 1960) Moscow, Izd-
   vo AN SSSR, 1961. 231 p. Errata printed on the inside of back
   cover. 2500 copies printed.

Sponsoring Agency: Institut fizicheskoy khimii Akademii nauk SSSR.

Resp. Ed.: B. V. Deryagin, Corresponding Member, Academy of Sciences
   USSR; Editorial Board: N. N. Zakhavayeva, N. A. Krotova, M. M.
   Kusakov, S. V. Nerpin, P. S. Prokhorov, M. V. Talayev and G. I.
   Fuks; Ed. of Publishing House: A. L. Bankvitser; Tech. Ed.:
   Yu. V. Rylina.

PURPOSE:. This book is intended for physical chemists.

Card 1/8

42

Studies in the Field of Surface Forces (Cont.)   SOV/5530

COVERAGE: This is a collection of 25 articles in physical chemistry
on problems of surface phenomena investigated at or in associa-
tion with the Laboratory of Surface Phenomena of the Institute
of Physical Chemistry of the Academy of Sciences USSR. The first
article provides a detailed chronological account of the Labora-
tory's work from the day of its establishment in 1935 to the
present time. The remaining articles discuss general surface
force problems, polymer adhesion, surface forces in thin liquid
layers, surface phenomena in dispersed systems, and surface forces
in aerosols. Names of scientists who have been or are now associ-
ated with the Laboratory of Surface Phenomena are listed with
references to their past and present associations. Each article
is accompanied by references.

TABLE OF CONTENTS:

Zakhavayeva, N. N. Twenty-Five Years of the Laboratory of
Surface Phenomena of the IFKhAN SSSR (Institute of Physical
Chemistry of the Academy of Sciences USSR)   3

Card 2/8

Studies in the Field of Surface Forces (Cont.)   SOV/5590

Adhesion Process in Platinum Threads   143

IV. SURFACE PHENOMENA IN DISPERSION SYSTEMS

Card 6/8

ZARKHI, A.Z., kand.tekhn.nauk, dotsent; NERPIN, S.V., doktor tekhn.nauk, prof.

Determining stresses in sections of a trestle-type embankment. (MIRA 14:9)
Trudy LIVT no.19:3-10 '61.
(Embankments) (Strains and stresses)

NERPIN, S. V.; GLOBUS, A. M.

"The Thermodynamics and Kinetics of Soil Moisture; Experimental
Testing of the Theory with Radioactive Tracers"
To be presented at the Symposium on the Use of Radioisotopes
in Soil-Plant Nutrition Studies, Bombay, 26 February - 2 March 1962.

AGROPHYSICS Institute of the USSRMinistry of Agriculture,
Leningrad, USSR.

NERPIN, Sergey Vladimirovich, doktor tekhn. nauk, prof.; KOTOV,
Aleksandr Ivanovich; RASHA, Dmitriy Nikolayevich; ZARKHI,
A.Z., kand. tekhn. nauk, dots., retsenzent; MORARESKUL,
N.N., kand. tekhn. nauk, dots., retsenzent; SHTENTSEL',
V.K., red.; VOLCHOK, K.M., tekhn. red.

[Footings, basements, and engineering geology] Osnovaniia,
fundamenty i inzhenernaia geologiia. Pod obshchei red. S.V.
Nerpina. Moskva, Izd-vo "Rechnoi transport," 1963. 360 p.
(MIRA 16:7)
(Engineering geology)

NERPIN, S.V., red.; MEL'NIKOVA, M.K., red.; CHUDNOVSKIY, A.F.,
red.; REVUT, I.B., red.; STEPANOV, L.N., red.; POYASOV,
N.P., red.

[Collection of papers on study methods in the field of
soil physics] Sbornik rabot po metodike issledovanii v
oblasti fiziki pochv. Leningrad, Agrofizicheskii nauchno-
issl. in-t, 1964. 320 p.   (MIRA 17:12)

1. Soveshchaniye po koordinatsii i metodike nauchno-
issledovatel'skikh rabot v oblasti fiziki pochv, Leningrad.
2. Agrofizicheskiy nauchno-issledovatel'skiy institut,
Leningrad (for all except Nerpin).

DERYAGIN, B.V.; NERPIN, S.V.; CHURAYEV, N.V.

Theory of vaporization of liquids from capillaries. Koll. zhur.
26 no.3:301-307 My-Je '64   (MIRA 17:9)

1. Institut fizicheskoy khimii AN SSSR, Moskva, Agrofizicheskiy
institut, Leningrad i Kalinskiy torfyanoy institut.

NERPIN, S.V.; CHURAYEV, N.V.

Kinetics of moisture evaporation from capillary porous bodies.
Inzh.-fiz. zhur. 8 no.1:20-26 Ja '65.   (MIRA 18:3)

1. Torfyanoy institut, Kalinin.

NERPIN, S.V.; PAKSHINA, S.M.
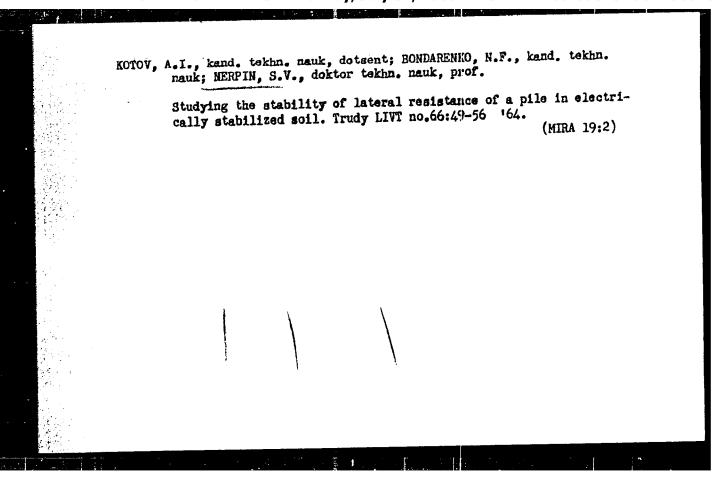
Vat residues from alcohol distillation as effective depressors of
physical evaporation from soils. Dokl. Akad. sel'khoz. nauk
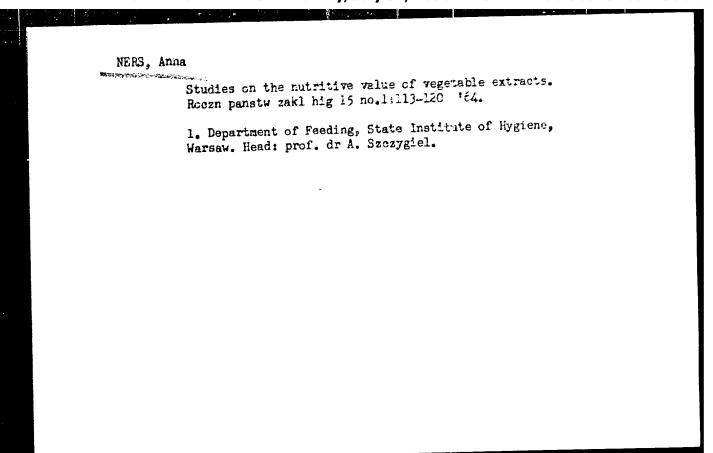no.10:4-7 O '65.   (MIRA 18:12)

1. Agrofizicheskiy nauchno-issledovatel'skiy institut.
2. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystven-
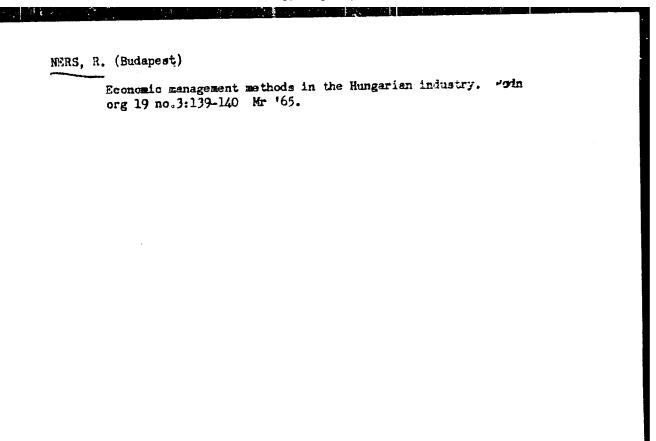nykh nauk imeni V.I.Lenina (for Nerpin).

DERYAGIN, B.V.; NERPIN, S.V.; ARUTYUNYAN, M.A.

Mechanocaloric effect at ordinary temperatures. Dokl. AN SSSR 160 no.2:387-389 Ja '65.
(MIRA 18:2)

1. Institut fizicheskoy khimii AN SSSR, Agrofizicheskiy institut Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I. Lenina i Institut pustyn' AN Turkmenskoy SSR. 2. Chlen-korrespondent AN SSSR (for Deryagin).

KOTOV, A.I., kand. tekhn. nauk, dotsent; BONDARENKO, N.F., kand. tekhn. nauk; NERPIN, S.V., doktor tekhn. nauk, prof.

Studying the stability of lateral resistance of a pile in electrically stabilized soil. Trudy LIVT no.66:49-56 '64.

(MIRA 19:2)

NERS, Anna

Studies on the nutritive value of vegetable extracts.
Rcozn panstw zakl hig 15 no.1;113-120 '64.

1. Department of Feeding, State Institute of Hygiene,
Warsaw. Head: prof. dr A. Szczygiel.

NERS, R. (Budapest)

Economic management methods in the Hungarian industry. Goin
org 19 no.3:139-140 Mr '65.

VALENT, Robert; NERSESIAN, Sarchis; PETRESCU, Stefania; POPESCU, Andrei;
SACHELARIE, Traian

Some problems of the driving program in machine tools. Probleme
automatiz 4:235-245 '62.

MALIYEV, Kazbek Soslanbekovich; NERSESOV, Aristakes Karpovich; BEDRAK,
T.V., red.; DATRIYEVA, Ye.U., tekhn.red.

[Best field crop varieties for North Ossetia] Luchshie sorta
palevykh kul'tur dlia Severo-Osetinskoi ASSR. Ordzhonikidze,
Severo-Osetinskoe knizhnoe izd-vo, 1960. 57 p.

(MIRA 14:3)

(Ossetia--Field crops--Varieties)

NERSESOV, G.A.

Technique of irrigating winter ear grain and seeded grasses grown
on leached saline soils of the Alazani Valley. Trudy Gruz
NIIGiM no.21:153-160 '60.   (MIRA 16:1)
                        (Alazani Valley—Irrigation farming)

ACC NR: AP6035931   (A)   SOURCE CODE: UR/0413/66/000/020/0195/0195

INVENTOR: Kiyasbeyli, A. Sh.; Taratuta, R. N.; Nersesov, G. A.; Arutyunov, L. A.; Kress, Ye. F.; Arutyunov, A. A.; Tsabkevich, E. R.; Agabekov, N. G.

ORG: none

TITLE: Dual-action vane pump. Class 59, No. 187530 [announced by the Special Design Bureau "Neftekhimpribor" (Spetsial'noye konstruktorskoye byuro "Neftekhimpribor")]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 195

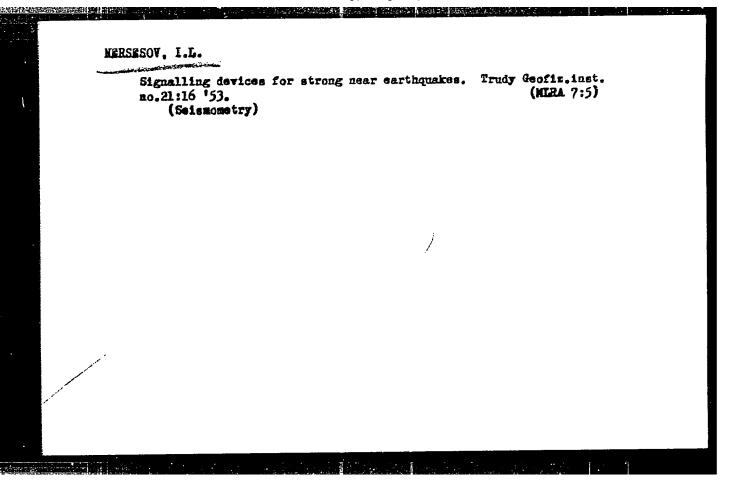TOPIC TAGS: pump, fluid pump, vane pump, ROTOR BLADE

ABSTRACT: An Author Certificate has been issued for a dual-action vane pump containing a rotor in which blades are mounted in radial grooves. These slide along the inner surface of the stator, the profile of which is formed by two arcs described from the center of the rotor and having various radii, and between them is located a curved crossover section. To reduce inertia, the crossover section is made in accordance with a curve determined by the equation

$$ r = \frac{h}{10}\left(2 + 6\frac{\theta}{\beta} - 8\cos\frac{\pi\theta}{\beta} - \frac{3}{\pi}\sin\frac{2\pi\theta}{\beta}\right), $$

Card   1/2   UDC: 621.662.4

ACC NR: AP6035931

where y is the blade-displacement value depending on angle θ, θ is the flow angle
(which changes from 0 to β, β is an angle taking in the entire guide curve, and h is
the maximal (given) working-blade-displacement value, which is equal to the difference
between the radii of the outer and inner arcs of the stator profile. Orig. art.
has: 1 figure.

[KT]
[WA-98]

SUB CODE: 13/   SUBM DATE: 21Jun65

Card 2/2

NERSESOV, I.L.

Signalling devices for strong near earthquakes.   Trudy Geofiz.inst.
no.21:16 '53.   (MLRA 7:5)
     (Seismometry)

NERSESOV, I.L.; RYKUNOV, L.N.

Plotting local earthquakes in Garm Province. Trudy Geofiz.inst.
no.21:19-26 '53.   (MIRA 7:5)
          (Garm Province--Seismology) (Seismology--Garm Province)

NERSESOV, I.L
USSR/Geophysics - Earthquakes

FD-1712

Card 1/1 : Pub. 45-12/12

Author : Rastvorova, V. A., and Nersesov, I. L.

Title : Vartashen earthquake of 1953

Periodical : Izv. AN SSSR, Ser. geofiz., 86-88, Jan-Feb 1955

Abstract : The authors present a scheme describing the propagation of the Vartashen earthquake of 2-5 September 1953, in the region between Tbilisi and Baku. The depth of the earthquake focus was found to be 5 to 8 kilometers; the accuracy of determination of the epicenter was evaluated at 1-2 km.
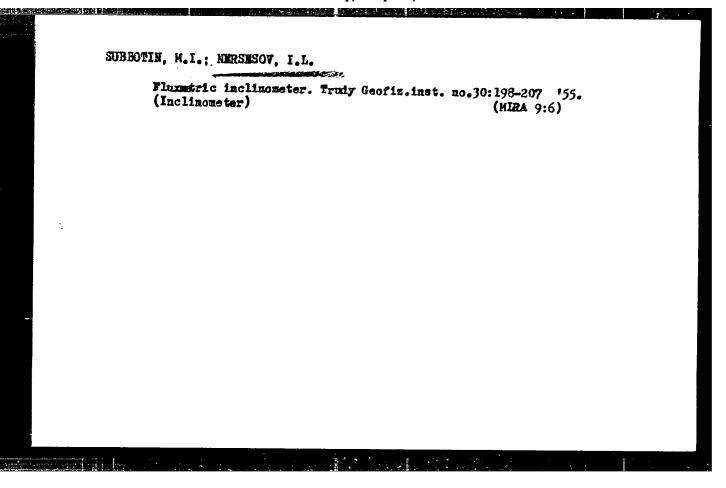
Institution : -

Submitted : -

SUBBOTIN, M.I.; NERSESOV, I.L.

Fluxmetric inclinometer. Trudy Geofiz.inst. no.30:198-207 '55.
(Inclinometer)   (MIRA 9:6)

NERSEROV, I.L.

60-36-10/10

AUTHOR: Nerserov, I. L.

TITLE: Coefficient of Linkage in a Seismograph-Galvanometer
             System (O koeffitsiyente svyazi sistemy seysmograph--
             gal'vanometr)

PERIODICAL: Trudy Geofizicheskogo Instituta, AN SSSR, 1956, Nr 36,
             pp. 134-143 (USSR)

ABSTRACT: The author discusses the effect of the coefficient
             of linkage in a seismograph-galvanometer system, and
             shows that if a system is composed of many permanently
             linked points, their linkage coefficients should be
             determined. There are 3 tables, and 9 references, of
             which 8 are Russian and 1 German.

AVAILABLE: Library of Congress

Card 1/1

SOV/49-58-8-3/17

AUTHORS: Gzovskiy, M.V., Krestnikov, V.N., Nersesov, I.L. and
             Reysner, G.I.

TITLE: Tectonic and Seismic Conditions of Garmskiy rayon in
             Tajik SSR (Sopostavleniye tektoniki s seysmichnost'yu
             Garmskogo rayona Tadzhikskoy SSR.I) Part I.

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,
             1958, Nr 8, pp 959 - 976 + 2 plates (USSR)

ABSTRACT: A junction of the vast Asian mountain chains, Himalaya-
             Pamir geosyndine and the T'ien-Shan Range with the Tajik
             depression represents territory of very active seismic
             activities. Particularly, the Garmskiy rayon is known for
             its highest concentration of the epicentres (Figures 1
             and 5).
             The history of its alpine, tectonic movements and the
             formation of its geological structure can be represented
             in the form of diagrams. The structural changes which were
             undergone during the periods of the Mesozoic and the
             Kainozoic in the eastern part of the region along the
             line NW-SE are shown in Figure 2, while Figure 3
             represents the same cross-section running through Garm-
Card1/5   skiy rayon.

SOV/ 49-58-8-3/17

Tectonic and Seismic Conditions of Garmskiy Rayon in Tajik SSR

Some of the data given in the diagrams were interpolated
from the places situated farther away (Figure 4) but it
was assumed that the possibility of error could not affect
the general character of the graphs.
A clear difference in the tectonic movements between the
geosyncline and the plateau areas can be clearly distin-
guished in Figures 5 and 6.
The present structure (Figure 7) of the Garmskiy rayon and
NE part of the Tajik depression is characterised by several
divisions of which the most important is the alpine district
of Pamir and Darvaz.
A main feature of the structure of the Garmskiy rayon is a
vertical displacement of the isolated blocks separated by
the tectonic faults which break through the Earth's core.
The traces of these faults can be found even in the
Palacozoic base. A change occurred in their direction in
comparison with that in the Neogen and Quaternay periods
at the time when an inversion took place of the pre-Pamir
depression and when the region of the Kabudkrin rose above
the surrounding areas.

Card2/5 At the same period in the north-west of the Kabudkrim

SOV/49-58-8-3/17
Tectonic and Seismic Conditions of Garmskiy Rayon in Tajik SSR

anticline, a series of faults developed, the depth of
which is characterised by the long and narrow grabens
filled with small rocks (Figure 1). These grabens could
not be independent structures as those in other areas
(Figure 7). It can be assumed that they are the remnants
of the changed direction of the movements of neighbouring
regions. Originally, a rise of one of the regions caused
the formation of a fault. The faults, in turn, caused a
break in the general movement of the area. Thus, at the
boundary of two neighbouring tectonic regions, the faults
can be found, usually at the narrow ridges (Figures 1 and 3).
The formation of new faults in relation to the dislocations
are explained by the faults being not vertical. They are
mostly inclined towards its lifted side.
A noticeable feature is a very well-maintained range of the
young faults and folds of   Neogen-Quaternary origin.
Their large number signifies a horizontally directed course
of the tectonic regions. Also, it can be assumed from
their general orientation that the shear effect was directed
along the Meridian.
Card3/5   The Palaeozoic foundation of the Garmskiy rayon was effected

SOV/49-58-8-3/17

Tectonic and Seismic Conditions of Garmskiy Rayon in Tajik SSR

by both the strong, vertical forces and the weaker,
horizontal shearing stresses, thus being subjected to
a deformation which was of plastic character. This can
be seen on the surfaces where the Palaezoic is found
close to the Mesozoic rocks. Where this type of deform-
ation occurred with great speed, the faults were formed.
It could be said that all the blocks of Palaeozoic origin
behaved not as   rigid bodies but as a plastic medium
with some parts of the Earth core being somewhat of
greater viscosity in relation to the Mesozoic and the
Tertiary sedimentations.
The general character of the mechanism of formation of
the alpine structure of the Garmskiy rayon could be also
applied to the regions of Tajik depression (Figure 6).
It can be assumed that the developments in the Garmskiy
rayon took place during the second half of the Quaternary
period and lasted about 120-230 thousand years which can
be compared with 600 thousand years of the total time of
the Quaternary period.

Card 4/5

SOV/49-58-8-3/17

Tectonic and Seismic Conditions of Garmskiy Rayon in Tajik SSR

There are 8 figures and 28 references, 25 of which are Soviet and 3 German.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli
(Ac.Sc.USSR, Institute of Terrestrial Physics)

SUBMITTED: August 28, 1957

1. Geology--USSR

Card 5/5

SOV/49 -58-12-1/17

AUTHORS: Gzovskiy, M. V., Krestnikov, V. N., Nersesov, I. L.,
Reysner, G. I.

TITLE: Comparison between the Tectonics and Seismicity of Garmskiy Rayon of Tadzhik SSR. II (Sopostavleniye tektoniki s seysmichnost'yu Garmskogo rayona Tadzhikskoy SSR. II)

ABSTRACT: It was observed that more than 9000 epicentres of the energy from $10^4 - 10^{13}$ j showed activity during 1955 and 1956 in Garmskiy rayon of about 13 500 km^2 (Figs.2, 3 and 8). The earthquakes were registered in sufficient detail to give a complete picture of the seismicity of this region (Fig.1). This region, therefore, was chosen for the investigation on the relationship between seismicity and tectonic structure. A quantitative method of investigation was chosen so that the analysis of tectonics could be utilised in the determination of seismicity. The mean gradient of the velocity of vertical tectonic movements of the earth crust was calculated from Eqs.(1) and (2). Some results are shown in Figs.4, 5 and 7 and Tables 1 and 2. The cross-sections I-I and II-II employed in the calculations can be seen in Fig.6. The comparison showed that in Garmskiy rayon the areas of nigher

Card 1/3

SOV/ 49-58-12-1/17

Comparison between the Tectonics and Seismicity of Garmskiy Rayon of Tadzhik SSR. II.

seismic activity coincide with the banded structure, for which a mean gradient of tectonic movements in the Quaternary period was high (Figs.5 and 6). Therefore, it can be stated that the velocity of seismic activities increases with an increase of mean tectonic gradient. In order to verify this relation, a method was devised which could be applied to any region having seismic activity of short duration (2 to 3 years), provided weak earthquakes and the measurable gradients of tectonic movements are of recent origin. This method is based on the detailed analysis which showed that the correlation between the frequency of earthquakes (Fig.1) and the tectonic gradient, Fig.6, is maintained in various areas of the Garm region (Table 3, A_7 - frequency). As the above relation was found

for one region only, it is possible that some modifications

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SOV/ 49 -58-12-1/17

Comparison between the Tectonics and Seismicity of Garmskiy Rayon of
Tadzhik SSR. II.

are necessary for the different tectonic structures or for
various depths of the earth crust. Therefore, the investi-
gations in this matter are not yet concluded and the addit-
ional information will be presented at some future date.
There are 3 tables, 8 figures and 28 references, of which 23
are Soviet, 3 are German (2 translated from Hungarian), and
2 are English.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of
Sciences, USSR, Institute of Physics of the Earth)

SUBMITTED: August 4, 1958.

Card 3/3

BAGDASAROVA, A.M.; ISLAMOV, K.Sh.; KORIDALIN, Ye.A.; KUZNETSOV, V.P.;
    KUZ'MINA, N.V.; NEMILINA, V.S.; NERSESOV, I.L.; SULTANOVA, Z.Z.;
    KHARIN, D.A.

Seismicity of the eastern part of the southern spurs of the
Greater Caucasus and some problems of methodology in studying
the seismicity of individual regions. Report No.1. Izv.AN Azerb.SSR.
Ser.geol.-geog.nauk   no.6:121-131 '59.   (MIRA 15:4)
                        (Caucasus—Seismology)

3.9300

66414

SOV/20-128-6-18/63

AUTHORS: Gurevich, G. I., Nersesov, I. L., Kuznetsov, K. K.

TITLE: On the Law of Earthquake Recurrence in Consequence of the Rules Governing the Deformation and Comminution of Rocks

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 6, pp 1163-1166 (USSR)

ABSTRACT: Yu. V. Riznichenko and I. L. Nersesov (Ref 1) proved the universal character of the relation $\lg \dfrac{N_S(E)}{N_S(E*)} = - \gamma \lg \dfrac{E}{E*}$, where $N_S(E)$ denotes the small-centered earthquake recurrence (i.e. the annual number per unit of the seismic zone), E their energy, E* one of the values of E; furthermore, $\gamma \approx 0.4 - 0.45$ holds. The above relation holds true in nearly the entire range of the measured E ($10^7 - 10^{25}$ erg). Only in the proximity of the largest E of the zone for which the above equation is set up, γ strongly increases with rising E. The comminution of solid bodies is correlated with a similar relation $\lg \dfrac{N(v)}{N(v_{min})} =$

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66414

On the Law of Earthquake Recurrence in Consequence of the Rules Governing the Deformation and Comminution of Rocks

SOV/20-128-6-18/63

$= - \bar{\gamma} \, \lg \dfrac{v}{v_{min}}$, where $N(v)$ denotes the number of those sample fragments whose volumes v are placed between v and $10 \, v$, and v_{min} the smallest among the v considered. Furthermore, $\bar{\gamma} \approx 0.6 - 0.7$ holds under the condition of a moderate degree of comminution, and that v_{min} be larger than the volume of those particles which are rubbed off from the surface of the fragments. The above relation is practically determined only by the rule governing the sample straying through the separation plane. A diagram shows the summed results of experiments made on 20 samples of cement, colophony, and on various rocks. The second equation written above can be provisionally explained by considering that the new separation planes are formed mainly between the closest of the earlier thrown up separation bound- aries. Energy E is computed as that energy which separates on the surface of a sphere having the chosen radius R. This radius is assumed to be the same for all earthquakes. For the various seismic zones, the largest among the three main tangential

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66414

SOV/20-128-6-18/63

On the Law of Earthquake Recurrence in Consequence of the Rules Governing the Deformation and Comminution of Rocks

stresses is of the order of magnitude 1 - 10 kg/cm^2. Hence, E_0 may be stated as being proportional to the volume of the hearth $v_0 = (4\pi/3)r_0^3$. Within the scope of the problem under investigation, the macroscopic characteristics of the state of the seismically active region of the earth crust (seismic zone) may be computed by means of the sole quantity $\tau_{max} = \eta \dot{\varepsilon}$, ε denoting the largest among the three main shearing rates of the remanent (irreversible) zone deformation, η the mean value of the effective toughness in steady rock currents. The authors also investigated the typical case of earthquakes originating from the contact zone of two geological massifs moving with relative velocity F. For the recurrence of earthquakes the relation

$$N_v \approx \frac{1}{TL^3}\left[\frac{L^3}{v_0}\right]^{2/3}$$ is found, which may also be expressed by $\dot{\varepsilon}$, τ_{max}, E_0, and E. L denotes the zone width with the volume V = LS,

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On the Law of Earthquake Recurrence in Consequence of the Rules Governing the
Deformation and Comminution of Rocks

where S is the surface area of its section with the shearing
plane. The formula derived here is in general agreement with
seismological data. There are 1 figure and 3 references, 2 of
which are Soviet.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR
(Institute of the Physics of the Earth imeni O. Yu. Shmidt of
the Academy of Sciences, USSR)

PRESENTED: June 11, 1959, by A. F. Ioffe, Academician

SUBMITTED: June 8, 1959

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PHASE I BOOK EXPLOITATION   SOV/5296

Nersesov, I. L., V. P. Grin, and K. Dzhanuzakov

O seysmicheskom rayonirovanii basseyna reki Naryn (On the Seismic Regionaliza-
   tion of the Naryn River Basin) Frunze, Izd-vo AN Kirgizskoy SSR, 1960.
   175 p.   500 copies printed.

Sponsoring Agency: Akademiya nauk Kirgizskoy SSR.   Otdel seysmologii.
   Resp. Ed.: Ye. A. Rozova;   Ed. of Publishing House: Ye. A. Revina;
   Tech. Ed.: M. G. Anokhina.

PURPOSE: This book is intended for seismologists, geologists, and geophysicists.

COVERAGE: The book presents the results of seismic observations in the Naryn
   River Basin.   The data provided are intended to serve as a basis for a more ac-
   curate map of the seismic regions in that area.   General geographic information
   on the area is given.   The organization of seismic observations and the re-
   sults obtained are described, and the problems of seismic regionalization are
   analyzed.   The first, third, fifth, and sixth chapters were written by I. L.
   Nersesov, the second chapter by V. P. Grin and K. Dzhanuzakov, and the fourth
   by I. L. Nersesov and V. P. Grin.   Participating in the processing of the in-

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On the Seismic (Cont.)   SOV/5296

strumental data, as well as in the computation and graphic work, were: A. A.
Zhigal'tsev, staff member of the TKSE (Tadzhik Comprehensive Seismological
Expedition of the Institute of Physics of the Earth, imeni O. Yu. Shmidt, AS
USSR); A. Atabayev and L. M. Plotnikova, staff member of the Otdel seysmo-
logii Instituta mekhaniki i matematiki imeni V. I. Romanovskogo AN Uzbek-
skoy SSSR (Seismology Section of the Institute of Mechanics and Mathematics
imeni V. I. Romanovskiy, AS Uzbekskaya SSR); and V. F. Trubenko, staff
member of the AS Kirgizskaya SSR. The authors thank A. T. Kon'kov, director
of the Andizhan seismic station, for supplying the microseismic data on the
Fergana Valley and adjacent regions. There are three appendixes containing
listings of earthquakes recorded in the area of the Naryn River Basin during
the period from 1929 to 1958. There are 107 references: 81 Soviet, 22 English,
3 German, 1 French.

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PHASE I BOOK EXPLOITATION   SOV/4068

Akademiya nauk SSSR. Sovet po seysmologii

Byulleten', No. 8: Voprosy seysmicheskogo rayonirovaniya (Bulletin of the
    Council on Seismology, Academy of Sciences USSR, No. 8: The Problems of
    Division Into Seismological Districts) Moscow, 1960. 233 p. 1,300
    copies printed.

Resp. Ed.: S. V. Medvedev, Doctor of Technical Sciences; Eds. of Publishing
    House: I. A. Razanov, and L. K. Nikolayeva; Tech. Ed.: T. P. Polanova.

PURPOSE: This publication is intended for seismologists.

COVERAGE: The publication contains articles based on reports presented at a
    meeting of the Council on Seismology held in Moscow, March 20-26, 1958. The
    articles reflect the present state of work conducted in seismic "regional-
    ization" and discuss the following problems: methods of seismic regional-
    ization and microregionalization, methods of compiling intermediate scale regional
    seismic maps, instrument and descriptive data on earthquakes in different
    seismic regions of the USSR, and the relationship between seismicity and
    geological structure. The articles are accompanied by diagrams, tables,
    and bibliographic references.

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Bulletin of the Council (Cont.)   SOV/4068

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PHASE I BOOK EXPLOITATION

Pune, V. I., M. V. Gzovskiy, E. F. Zapol'skiy, V. I. Keylis-Borok,
I. L. Nersesov, L. N. Malinovskaya, I. L. Barzhar, G. I. Pavlova,
T. G. Rautian, O. I. Reymer, Yu. V. Rimichenko, and V. I. Khalturin

Metody detal'nogo izucheniya seysmichnosti (Methods of Detailed Seismic Research)
Moscow, Izd-vo AN SSSR, 1960. 327 p. No. of copies printed not given.
(Series: Akademiya nauk SSSR. Institut fiziki zemli. Trudy, vyp. 9 [176])

Resp. Ed.: Yu. V. Rimichenko, Corresponding Member AS USSR; Ed. of Publishing
House: S. I. Mesarskiy; Tech. Ed.: O. G. Ul'yanova

PURPOSE: This book is intended for geophysicists, particularly seismologists.

COVERAGE: The book summarizes the principal results of the work of the Tajik
Institute fiziki zemli AN SSSR (Tadzhik Complex Seismological Expedition
of the Institute of Physics of the Earth of the AS USSR) and the Institut
seysmologii AN Tadzhikskoy SSR (Institute of Seismology of the AS Tadzhik
SSR) during the period 1955-1957. Among the topics discussed are: seismic
apparatus used, new methods for determining the coordinates of earthquake

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Methods of Detailed Seismic Research

foci, detailed methods for determining the structure of the earth's crust,
some results of these determinations, methods of determining seismic energy,
on the basis of a series of criteria, analysis of dominant frequencies, the
use of frequency-selective apparatus, a general description and analysis
of seismic conditions in the Garm and Stalinabad areas, the geological
structure of the Garm region and the history of its development, and a
comparison of the spatial distribution of seismicity and the geological
structure of the area. The Foreword mentions Academician
G. A. Gamburtsev [deceased] who laid the foundations for this work when
he was director of the TKSE. The individual chapters of the book were
written by: Introduction and Chapter 1 — I. L. Barzhar and Th. V. Rimi-
chenko; Chapter 2 — I. L. Barzhar; Chapter 3 — I. L. Nersesov and T. G.
Rautian; Chapter 4 — T. G. Rautian; Chapter 5 — E. F. Zapol'skiy and
V. I. Khalturin; Chapter 6 — V. I. Keylis-Borok, I. L. Nersesov;
G. I. Pavlova, and V. I. Khalturin; Chapter 7 — T. I. Pune, I. L. Nersesov
and Th. V. Rimichenko; Chapter 8 — M. V. Gzovskiy, I. L. Keylis-Borok,
and Th. V. Rimichenko; Chapter 9 — V. I. Pune, M. V. Gzovskiy and I. L. Nerse-
sov. There are 272 references: 185 Soviet, 73 English, and 14 German.

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Resource—

Methods of Detailed Seismic Research   SOV/5096

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Methods of Detailed Seismic Research   SOV/5096

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S/049/60/000/03/001/019
E131/E691

AUTHORS: Gzovskiy, M.V., Krestnikov, V.N., Nersesov, I.L. and Reysner, G.I.

TITLE: New Principles of Seismic Zoning Derived for Central Tyan'-Shan. II

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofisicheskaya, 1960, Nr 3, pp 355-370 (USSR)

ABSTRACT: This is a continuation of work published in this journal, Nr 2, 1960. The investigation is based on the seismic zoning chart of the USSR (Ref 13). Only earthquakes of magnitude 9, corresponding to the energy $E = 10^{16}$ J, were considered. The purpose of the investigation was to establish those areas considered to be the safest from the point of view of engineering construction. The method was based on the rate of tectonic movements as described by Gzovskiy et al. (Ref 5). The map shown in Fig 1 was compiled on the basis of the results thus obtained. The method of seismic prognosis consisted of three separate stages:
1) The territory was divided according to the gradients of tectonic movements.
2) The zones thus determined were classified according to the magnitude of the above rate.

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E131/E691

New Principles of Seismic Zoning Derived for Central Tyan'-Shan. II

5) The seismic safety was decided on the basis of the above in
conjunction with geological data.
As an example, the three safety zones, 1, 2, 3, are shown in Fig 2.
The seismic activity A of a zone is defined as a period of the
earthquake frequency, T = 1/N, the isolines of which were plotted as
shown in Figs 3-5.   The first chart was based on the observations
during 1957/58, the second during the period 1950-56 and the third
was based on the strong earthquakes during the period starting 1885.
The unit zones on the charts are of 1000 km^2, the time unit is one year
and the energy E = 10^{10}J (K = 10). The seismic charts obtained,
therefore, differ from the usual zoning charts by inclusion of the
frequency of earthquakes. The final choice of a zone for hydro-
engineering construction could be based on the magnitude of earthquakes
defined by the standards SN-2-57 (Ref 14) or GOST 3699-45 (Ref 8).

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New Principles of Seismic Zoning Derived for Central Tyan'-Shan. II

As an example, the probability $p < 0.001$ of occurrence of earthquakes
(once or less in 1000 years) is suitable for the erection of less
durable structures and $p < 0.0001$ (once or less in 10000 years) for
long-lasting structures. Determination of such a probability can
be based on the above zoning charts and the nomogram given in Fig 6.
Charts showing the regions of various probabilities of the occurrence
of earthquakes, calculated for Central Tyan'-Shan, are given in
Figs 7 and 8. There are 8 figures and 19 references, 17 of which are
Soviet and 2 English.

ASSOCIATION: Akademiya nauk SSSR, institut fiziki zemli (Academy of Sciences USSR,
        Institute of Physics of the Earth)

SUBMITTED: July 9, 1959

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NERSESOV, I. L.

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S/169/61/000/011/013/065
D228/D304

AUTHORS: Kuznetsov, V. P., Kuz'mina, N. V., Nenelina, V. S.
Nersesov, I. L., Sultanova, Z. Z., and Kharin, D. A.

TITLE: Seismicity of the eastern part of the southern spurs
of the Central Caucasus Range and some methodical
questions of the study of seismicity of separate areas

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1961, 18,
abstract 11A162 (Izv. AN AzerbSSR, Ser. geol.-geogr.
n., no. 5, 1960, 21 - 33)

TEXT: Determination of the degree of seismic activity on the sou-
thern spurs of the Central Caucasus Range was continued from the ex-
peditional data of 1953 (for the first part see RZhGeofiz., no. 10,
1960, 11944) with a description of the strongest earthquakes: The
Aksu-Kyurdamir earthquake of October 8, 1953, and the Avakhil earth-
quake of October 4, 1953 (the strongest ones); and the Caspian re-
gion earthquakes of August 8, September 14 and 19, and October 13.
Epicentral zones – situated in a comparatively narrow strip along
the Central Caucasus Range's southern slopes which follows the main
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                                       D228/D304

structural directions - were considered. With the exception of some deviations, the seismically-active sections correspond to the tren sitional belt from the depressions to the mountain regions, i.e the zone of contemporary contrasting movements. In the vicinity of Kutkashen a group of epicenters in a small area is situated transversely to the strike of the structures. Within the seismically-active belt the areas of epicenter concentration are separated by sections of complete quiescence. When comparing the expeditional data of 1953 and 1951 - 1952 with those of the network of permanent stations for the period from 1913, it is established that a certain redistribution of seismic activity has taken place, although the locations of strong earthquakes coincide with areas which are distinguished by their activity according to the observations of seasonal expeditions. The expeditional investigations enable observational data to be processed more accurately and a better basis to be constructed for the relations of seismic and tectonic phenomena. The complexity of the geologic structure of the study area hampered the obtaining of the coordinates of earthquake foci with the required precision. The use of different methods permitted determination of the epicenter positions with an accuracy of up to ± 5 km, and also
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                                       D228/D304

the propagational velcoties of seismic waves and their ratios The
ratio of the velocities for different foci varied from west to east
from 1.8 (the Vartashen district) to 2.2 (the Avakhil district)
evidently because of the presence of a thick series of sedimentary
rocks in the eastern areas. The low value of the fictiticus veloci-
ty, which varies from 4.1 (Astrakhanovka) to 6.1 km/sec. (Durukhsha)
is a consequence of the low value of the velocity ratio. [Abstrac-
tor's note: Complete translation].

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