

SAVARENSKIY, Ye.F., prof.

Chilean earthquakes. Priroda 49 no.9:78-86 S '60. (MIRA 13:10)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR, Moskva.
(Chile--Earthquakes)

S/169/62/000/009/008/120
D228/D307

AUTHORS: Savarenskiy, Ye. F. ~~et al~~

TITLE: Earthquakes in the USSR. Editorial abstract

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 19, abstract 9A124K ((Sovet po seysmol. AN SSSR), M., AN SSSR, 1961, 412 p., illust., maps, 3 r. 13 k.)

TEXT: The monograph is the first attempt to generalize from a common attitude both microseismic and instrumental data on earthquakes on the USSR's territory. The monograph consists of two parts. Part One -- "Equipment, methods of processing, and classification of the USSR's earthquakes" -- contains the following chapters: Ch. 1 -- "History of the development of instrumental seismic observations in the USSR" -- D. P. Kirnos, D. A. Kharin, N. V. Shebalin; Ch. 2 -- "Methods of processing instrumental seismic observations" -- S. I. Masarskiy, A. A. Treskov; Ch. 3 -- "Magnitude of earthquakes" -- S. L. Solov'yev; Ch. 4 -- "Determining the force (intensity) of earthquakes" -- S. V. Medvedev; Ch. 5 -- "Force, magnitude, Card 1/3

S/169/62/000/009/008/120
D228/D307

Earthquakes in the USSR ...

and depth of earthquake foci" -- N. V. Shebalin; Ch. 6 -- "Trial instrumental study of local earthquakes" -- Ye. A. Koridalin, S. I. Masarskiy, I. L. Nersesov, D. A. Kharin. Part Two -- "Regional seismicity" -- consists of 20 chapters: Ch. 7 -- "General review of seismicity in the USSR" -- S. L. Solov'yev; Ch. 8 -- "Seismicity of the Carpathian Zone" -- S. V. Yevseyev, A. Ya. Levitskaya, Ye. A. Sagalova; Ch. 9 -- "Seismicity of the Crimea" -- A. Ya. Levitskaya; Ch. 10 -- "Seismicity of the Caucasus" -- Ye. I. Byus, T. M. Lebedeva, A. Ya. Levitskaya, A. D. Tskhakaya; Ch. 11 -- "Seismicity of the region Sochi-Krasnaya Polyana" -- A. Z. Kats, D. N. Rustanovich; Ch. 12 -- "Seismicity of the Dzhavakhetskoye (Akhalkalaks-koye) Highland" -- A. D. Tskhakaya; Ch. 13 -- "Seismicity of the Shemakhinskaya Zone" -- A. M. Bagdasarova, N. V. Kuz'mina, V. S. Nenilina; Ch. 14 -- "Seismicity of the Kopetdag'skaya Zone" -- N.A. Linden, Ye. F. Savarenskiy; Ch. 15 -- "Seismicity of Western Turkmeniya" -- S. I. Masarskiy; Ch. 16 -- "Seismic conditions of the Ashkhabad'skaya Zone" -- S. V. Puchkov; Ch. 17 -- "Central Asian earthquakes" -- N. A. Vvedenskaya; Ch. 18 -- "Seismicity of the Garm'skaya Zone" -- A. M. Bagdasarova, N. V. Kuz'mina; Ch. 19 --

Card 2/3

Earthquakes in the USSR ...

S/169/62/000/009/008/120
D228/D307

"Seismicity of the Ferganskaya Valley and Tashkent" -- Ye. M. Butovskaya, A. T. Kon'kov; Ch. 20 -- "Seismicity of Northern Tyan'-Shan'" -- A. A. Fogel', I. V. Gorbunova; Ch. 21 -- "Earthquakes of the Altaye-Sayanskaya Zone" -- R. I. Khovanova; Ch. 22 -- "Seismicity of the Baykal Zone" -- A. A. Treskov, K. V. Pshennikov; Ch. 23 -- "Earthquakes of the Far Eastern Zone" -- N. A. Linden; Ch. 24 -- "Earthquakes of Kamchatka and the Kuriles" -- N. V. Kondorskaya; R..Z. Tarakanov; Ch. 25 -- "Earthquakes of the Urals" -- A. Ya. Levitskaya; Ch. 26 -- "Seismicity of Soviet Arctica" -- N. A. Linden. A list of references (about 600) is given. [Abstracter's note: Complete translation.] ✓

Card 3/3

21206

3,9300 (1019,1109)
9,9865

S/188/61/000/001/001/009
B108/B209

AUTHORS: Vasil'yeva, T. L., Proskuryakova, T. A., Rykunov, L. N.,
Savarenskiy, Ye. F.

TITLE: The influence of the relief of the Earth's surface upon the
propagation of microseisms

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika,
astronomiya, no. 1, 1961, 3-12

TEXT: An attempt has been made to estimate the influence of the relief of
the Earth's surface upon the propagation of microseisms. This is
necessary for the exploration of the upper layers of the Earth's crust,
for the choice of a net of research stations, etc. In the present study,
an ultrasonic model was used. Between 1956 and 1959, about forty micro-
seismic "storms" were observed in the USSR and in Europe. The storm
observed on February 1-3, 1958, is subjected to a close examination. The
epicenter of this storm was at 15⁰⁰' east longitude and 69²⁰' north
latitude, i.e., along the north-western shore of Scandinavia. For com-
parison of the seismic intensity, the quantity $(A/T)^2$ was determined at
Card 1/4

21206

S/188/61/000/001/001/009

B108/B209

The influence of the relief...

various stations (A - amplitude, T - period). The following relation holds for the energy of the seismic focus: $\ln f + \ln E - k\Delta = \ln\{(A/T)^2\Delta\}$ (1), where Δ denotes the distance of the station from the epicenter, k the absorption coefficient, f a factor accounting for the type of focus, for the peculiarities of the propagation path, and for the particulars of the recording station. k is practically constant, and so is f when epicenter and station are axially symmetric. For stations equidistant from the epicenter, the ratio A/T may be determined from an $\ln\{(A/T)^2\Delta\}$ - versus - Δ diagram. In the present study, the distance between epicenter and Ashkhabad (660 km) was taken as a standard, Δ_0 . When constructing models for studying the influence of the Earth's relief upon seismic intensity, the authors assumed that: a) seismic waves are superficial Rayleigh surface waves, b) the medium is continuous and homogeneous along the way of propagation. The models were made of 3 mm thick plexiglass with the relief engraved on the sides. A stack of 10 ammonium dihydrophosphate layers (2·2·2 cm) was used as a source of elastic waves. The period of emission was $T = 17.4 \cdot 10^{-6}$ sec. BaTiO₃ plates (2 mm thick) glued into the

Card 2/4

21206

S/188/61/000/001/001/009
B108/B209

The influence of the relief...

model served as receivers. The scale of the model was 1 : 1,000,000. Procedure was as follows: 1) measurement of the amplitude of Rayleigh waves for a smooth surface, 2) cutting of the relief corresponding to the natural one, and measurement of the amplitude, 3) calculation of the ratio $A/A_{control}$ of the amplitudes as measured by the main and control receivers for a smooth (\tilde{A}_g) and a rough (\tilde{A}_r) surface, 4) calculation of \tilde{A}_r/\tilde{A}_g which is a measure for the influence of the relief. This quantity was then divided by the same quantity for the distance between epicenter and Ashkhabad. For a number of stations ("Warsaw", "Moscow", "Makhachkala"), agreement between observation in nature and model experiment was good; for other stations, however, a discrepancy was found ("Goris", "Triest", "Semipalatinsk"). This discrepancy was subjected to further examination for the line epicenter - Moscow - Goris because, according to the results, the source of trouble lies between Moscow and Goris: namely, the Caucasus Mountains, i.e., the Tauro-Caucasian geosyncline with mesocenozoic sediments of a depth of 8-10 km. In the model, this was realized by cutting out parts from the sides of a plexiglass plate (native rock) and filling this profile with a paraffin-polyethylene mixture (representing the

Card 3/4

21206

S/188/61/000/001/001/009

B108/B209

The influence of the relief...

sediments). With such a model, agreement was satisfactory for the line Moscow - Goris, too, particularly when discontinuities of the medium on the natural line are taken into consideration. A similar influence is exerted by the Alps on the line epicenter - Triest, and by the Ural Mountains on the line epicenter - Semipalatinsk. These studies showed that not only the surface of the Earth affects the intensity of microseismic waves, but also any change in the medium through which these waves are passing. There are 6 figures, 3 tables, and 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc. The reference to the English-language publication reads as follows: Iyer H. M., Geoph. Journ., 1, no. 1, 1958.

ASSOCIATION: Kafedra fiziki zemnoy kory (Department of the Physics of the Earth's Crust)

SUBMITTED: March 5, 1960

Card 4/4

23456

S/049/61/000/001/001/008
D226/D306

3,9360 (1019,1109,1327)

AUTHORS: Val'dner, N.G.; Savarenskiy, Ye.F.

TITLE: On the nature of the Lg_1 - phase and its propagation
in North East Asia

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya. Izvestiya,
no. 1, 1961, 3 - 24

TEXT: Fifty-four earthquakes occurring during 1957-8 in the region
Pamir - Mongolia - Kurile arc - Aleutians, in the magnitude range
 $4\frac{1}{2}$ - 7, are analyzed in detail for the phases Rg and Lg arriving
at a single station, Tiksi ($72^\circ N$, $128^\circ E$). The arrivals fall into
two groups, one with and one without an appreciable fraction of
oceanic path. The wholly continental paths give strong clear arri-
vals of both Lg and Rg with fairly short periods: 2 - 10 sec. The
velocities deduced are Lg_1 - 3.53 Km/s; Lg_2 - 3.31 Km/s; Rg - 3.05
Km/s. A sub-group from epicenters in the Aleutians gave rather

Card 1/8

23456

S/049/61/000/001/001/008
D226/D306

On the nature of the ...

weak long-period (18/24 sec) surface arrivals, probably due to having passed through the deepest ($H > 3.5$ Km) part of the Bering Straits, where the graphitic layer must be interrupted. The main group with interrupted paths, e.g. those from the Kurile arc traversing the sea of Okhotsk, gave $Lg_1 - 3.50$ km/s: $Lg_2 - 3.29$ km/s and $Rg - 3.06$ km/s. The conclusion from this part of the paper is that the granitic layer is complete between Mongolia and Tiksi but is interrupted between the Aleutian-Kurile-Japan sector and Tiksi. There are one map, 5 examples of seismograms and a table of 54 earthquakes giving for each the time of origin, the epicentral coordinates correct to about 0.5° , the epicentral distance used, the phases observed, direction of first motion, travel time and deduced velocity of each observed phase and its principal period. The authors then discuss extensively the theory of the properties of Love waves, proceeding from the case of a single layer on a rigid substrate and extending to the case of 2 elastic layers on an elastic substrate. This theory is based on the multiple-reflection of plane SH-waves. Then some results are calculated for group-velocity

Card 2/8

23456
S/049/61/000/001/001/008
D226/D306

On the nature of the ...

based on the following choice of values:

$$\frac{b_2}{b_1} = 1.127, \frac{b_3}{b_1} = 1.324; \frac{P_2}{P_1} = 1.095, \frac{P_3}{P_1} = 1.204$$

where b - velocity of SH in media 1, 2, 3; and P - density of media 1, 2, 3. The results are illustrated in Fig. 10 for various values of h_1/H , where h - thickness of upper layer, $H = h_1 + h_2$, h_2 - thickness of lower layer. The effect of the sharpness of the maxima in these curves upon the amplitude and appearance of the arrivals is now analyzed. The theory given is formal and leads to the well known result

$$A(T_0) \sim \frac{1}{T_0 \sqrt{\left| \frac{dC}{dT} \right|_{T=T_0}}} \cdot x \quad (28) \quad (28)$$

where A - amplitude of onset centered on period T_0 , x - epicentral distance. The application of this result is graphically illustrated and it is seen that sharp onsets result from the further con-

Card 3/8

On the nature of the ...

23156
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D226/D306

dition that $\alpha^2 c / \alpha T^2$ must be large at $T = T_m$. Finally, the authors use a method of J. Dorman (Ref. 7: Numerical solution for Love wave dispersion on a half-space with double surface layer. Geophys. 24, No. 1, 1959) to estimate from their results and those of other authors including M. Báth (Ref. 9: The elastic waves Lg and Rg along Eurasiatic paths. Ark. geofys. B.2, No. 13, 1954), F. Press, T. Ewing (Ref. 10: Two slow surface waves across North America. Bull. Seism. Soc. Amer., 43, No. 3, 1952) the probable thickness of the crust in this region and also the ratio h_1/H . These results are illustrated in Figs. 12 and 13. The comment on Fig. 12 is that the scatter horizontally may be accounted for by errors in reading T from seismograms. The comment on Fig. 13 is that Lg may either be a first or second mode of Love wave. The hypothesis that it is a Love wave at all is claimed to be "satisfactory". There are 1 table, 13 figures and 16 references: 9 Soviet-bloc and 7 non-Soviet-bloc. The references to the four most recent English-language publications read as follows: I. Tolstoy, Dispersive properties of a fluid

Card 4/8

23456

S/049/61/000/001/001/008
D226/D306

On the nature of the ...

layer overlying a semi-infinite elastic solid. Bull. Seism. Soc. Amer. 44, No. 3, 1954; J. Dorman, Numerical solution for Love wave dispersion on a half space with double surface layer. Geophys. 24, No. 1, 1959; M. Bath, The elastic waves Lg and Rg along Eurasian paths. Ark. gefys. B2, No. 13, 1954; S. Oliver, M. Ewing, M. Press, Crustal structure of the arctic regions from the Lg phase. Bull. Geol. Soc. Amer., 66, No. 9, 1955.

ASSOCIATION: Akademiya nauk SSSR, institute fiziki zemli tsentral' naya seysmicheskaya stantsiya, Moskva (Academy of Sciences USSR, Institute of Physics of the Earth, Central Seismic Station, Moscow)

SUBMITTED: May 3, 1960

Card 5/8

SAVARENSKIY, E.F.

3/619/01/000/017/001/002
D233/D302

AUTHORS: Medvedev, S.V., Bune, V.I., Vvedenskaya, N.A., GaySKIY,
V.N. Kirillova, I.V., Nersesov, I.L., Rianichenko,
Yu.V., Savarenskiy, E.F. and Sorskiy, A.A.

TITLE: Instructions for regional seismological summaries

SOURCE: Akademiya nauk SSSR. Institut fiziki Zemli. Trudy no.
17 (184) Moscow 1961. Voprosy inzhenernoy seysmologii
no. 5, 128-145

TEXT: These instructions were confirmed by the director of the
Institute of Geophysics AN SSSR, M.A. Sadovskiy, on February 27,
1961. Their objective is clearly to secure a uniform system of
recording all seismological data pertinent to building construc-
tion, obtained in future in the USSR. The instructions are divi-
ded into six parts, containing 64 numbered articles, the follow-
ing being an indication of the scope of each part: 1) General

Card 1/3

Instructions for regional ...

S/213/01/000/017/001/002

Section 2.1.2 defines the purpose and scope of the work. The seismological map of the USSR established in 1957 is being kept up to date by continuing observations. Its scale is 1:1,000,000. The map is to be used to make seismological forecasts both for the epicentral zone and for the whole earth's surface. 2) Instrumental data on earthquakes. This is defined as data obtained now from both fixed and expeditionary stations as opposed to the study of past earthquakes. Methods of classification by magnitude, precision of epicentral location and frequency of recurrence are defined. 3) Engineering seismology. Under this heading is defined the format of an atlas of strong earthquake with isoseismals. This should be on a scale of 1:1,000,000. It is also hoped to include data on the energy density distribution of the frequency spectra. 4) Seismogeological data. Since some regularity is discernible in the distribution of shocks, a "seismotectonic" map should be a possibility. This would be particularly helpful in regions where seismological data up to this time are

Card 2/3

Instructions for regional ... S/519/51/000/017/001/002
D239/D502

... sparse. Gravitational data could also be useful here. 5) Procedures for making seismological summary maps and their documentation. These are to be of two types, corresponding to 1 and 3, above, i.e. seismological maps and maps of isoseismals showing energy and attenuation characteristics of the region. The way in which these should be prepared is described in considerable detail, together with some guidance about what is envisaged for the seismotektonic maps. 6) Arrangement, duration of and participants in the fulfilment of the project. The names and addresses of the participating institutions for each region are given; the end of the first term will be at the end of 1962. The map is expected from the AN SSSR (AS USSR) in 1963. There are 60 Soviet-bloc references

Card 3/3

S/049/61/000/005/007/013
D207/D306

AUTHORS: Savarenskiy, Ye. F., and Shechkov, B. N.

TITLE: Structure of the earth's crust in Siberia and the Soviet Far East determined from dispersion of Love and Rayleigh waves

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 5, 1961, 700-704

TEXT: This paper was presented at an augmented seminar of the Otdel seysmologii i seysmicheskoy sluzhby (Division of Seismology and Seismic Service) which dealt with surface waves and was held at Simferopol' between October 1 - 5, 1960. The authors determined the mean crust thickness in Siberia and the Soviet Far East from 42 seismograms of recent (1954-59) earthquakes in the Western Pacific, recorded at Sverdlovsk, Semipalatinsk, Irkutsk and Kyakhta. For each earthquake group velocities were found separately for Love and Rayleigh waves. These experimental group velocities were then compared with theoretical values published

Card 1/ 3

Structure of the earth's ...

S/049/61/000/005/007/013
D207/D306

by J. Dorman (Ref. 1: Numerical Solutions for Love Wave Dispersion on a Half-Space with a Double Surface Layer. Geophys., 24 (1959)) and by R. Stoneley (Ref. 2: Rayleigh Waves in a Medium with Two Surface Layers. Month. Not. Roy. Astr. Soc. Geophys. Suppl., 7, no. 2 (1955)). A two-layer of the crust was assumed in calculations. The mean crust thickness in Siberia and the Soviet Far East, determined from dispersion of Love waves, varied from 25 to 35 km. The dispersion of Rayleigh waves indicated a thickness of the order of 35 km. The greater crust thickness deduced from Rayleigh waves may be due to the stronger dispersion of these waves over oceanic paths. The results indicated that the granite layer of Siberia and the Soviet Far East was 1.5 - 2 times thicker than the basalt layer. The total mean thickness of the crust in middle latitudes of Siberia and the Soviet Far East is probably somewhat smaller than the thickness in the northern and southern parts of Siberia, but this requires verification. There are 3 figures, 2 tables and 2 non-Soviet-bloc references. The references to the English-language publications read as follows: J. Dorman, Numerical solutions for Love wave dispersion on a half-space with a

Card 2/3

Structure of the earth's ...

S/049/61/000/005/007/013
D207/D306

double surface layer. Geophys., 24, 1959; R. Stoneley, Rayleigh waves in a medium with two surface layers. Month. Not. Roy. Astr. Soc., Geophys. Suppl., 7, no. 2, 1955.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zemli (Institute of Physics of the Earth, AS USSR)

SUBMITTED: December 9, 1960

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Card 3/3

29580

S 049 61 000 006 006 014
D207 D306

99865(1019,1327)

AUTHORS Bulin, N.K. and Savarenskiy, Ye. F.

TITLE On short-period seismic surface waves

PERIODICAL Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya,
no. 6, 1961, 855-865

TEXT The authors discuss seismic surface waves, with periods of 0.2-2.5 sec and small group velocities of 280-800 m/sec, produced by explosions (1-200 km distant) and earthquakes (70-250 km distant). The experimental data were obtained by the Sredneaziatskaya ekspeditsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta gidrogeologii i inzhenernoy geologii (Central Asia Expedition of the All-Union Scientific Research Institute of Hydrogeology and Geological Engineering) and by the Bakhardokskaya geofizicheskaya ekspeditsiya (Bakhardoksk Geophysical Expedition). Each instrument used consisted of a ВЭПМК (VEGIK) receiver, a ГК-6 (GK-6) or ГВ-4 (GB-4) galvanometer and a РС-2 (RS-2) recorder. The frequency response of the instruments was peaked at

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Card 1 5

29580

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D207 D306

On short-period ...

periods of 0.1-1.0 sec (GK-6 galvanometer) or 0.05-1.0 sec (GB-4 galvanometer) and amplification ranged from 5×10^4 to 1×10^4 . The best seismograms were obtained from explosions in the Tedzhen and Mary region and from earthquakes in the Ashkhabad region; all the work was carried out in the Turkmen Republic. An analysis of the seismograms indicated that surface waves with these short periods were of the Rayleigh type and that they originated in fairly loose topmost sedimentary layers, only 10-20 m thick. Acknowledgements are made to Yu. A. Katsnel son for his help in calculations, and to Ye. K. Fomenko and N.G. Afanasyeva for supplying the data on explosions. There are 5 figures and 16 references, 9 Soviet bloc and 7 non-Soviet bloc. The four most recent references to English language publications read as follows: J. Oliver, Crustal structure and surface waves dispersion, p.4. Atlantic and Pacific Ocean Basins, M. Ewing, Press, Bull. Geol. Soc. Amer., 66 (1955); M. Ewing, P. Press, An investigation of mantle Raleigh waves, Bull. Seism. Soc. Amer., 44, no. 2 (1954); M.B. Dobrin, Dispersion in seismic surface waves, Geophys., 16, (1951); J. Oliver, M. Ewing, The effect of

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Page 2 3

29580

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0207 0506

On the formation of...

surface and sedimentary layers on continental surface waves. Bull.
Sov. Geol. Surv. Amer., 18, no. 4, (1958).

ASSOCIATION Vsesoyuznyy nauchno-issledovatel'skiy institut gidro-
geologii i inzhenernoy geologii (All-Union Scientific
Research Institute of Hydrogeology and Geological
Engineering) Akademiya nauk SSSR, Institut fiziki Zemli
(Academy of Sciences, USSR, Institute of Physics of the
Earth)

SUBMITTED November 14, 1960

4

Card 5 3

SAVARENSKIY, Ye.F.

Observations on long-period waves of the Chile earthquake of 1960.
Izv. AN SSSR. Ser. geofiz. no.8:1132-1140 Ag '61. (MIRA 14:7)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Seismic waves)

SAVARENSKIY, Ye.F.

Preface. Biul. Sov. po seism. no.9:3-4 '61.
(Tidal waves)

(MIRA 14:4)

VASIL'YEVA, T.L.; PROSKURYAKOVA, T.A.; RYKUNOV, L.N.; SAVARENSKIY, Ye.F.

Effect of the earth's relief on the propagation of microseisms.
Vest. Mosk. un. Ser. 3: Fiz., astron. 16 no.1:3-12 Ja-F '61.

(MIRA 14:4)

1. Kafedra fiziki zemnoy kory Moskovskogo universiteta.
(Topography) (Microseisms)

SAVARENSKY, E. F.

Z/023/62/000/001/002/004
D006/D102

AUTHORS: Kárník, V., Kondorskaya, N. V., Riznichenko, Yu. V., Savarensky, E. F.,
Solovyev, S. L., Shebalin, N. V., Vaněk, J., and Zátópek, A.

TITLE: Standardization of the earthquake magnitude scale

PERIODICAL: Studia geophysica et geodaetica, no. 1, 1962, 41-47

TEXT: The paper presents a proposal for standard methods of magnitude determination of both shallow and deep earthquakes, and describes the practical application of the suggested magnitude scale as agreed upon by Soviet and Czechoslovak seismologists at meetings held in Prague on December 7-14, 1960 and in early 1961. The proposal is based on the following postulates: (1) General acceptance of a unified formula for the definition of the earthquake magnitude M

$$M = \log (A/T)_{\max} + \sigma(\Delta) \quad (1)$$

where A is the maximum ground amplitude of the wave considered (in microns), T is the corresponding period in seconds, and $\sigma(\Delta)$ is the calibrating function expressing the relation between A/T and the epicentral distance Δ , which is

Card 1/3

Z/023/62/000/001/002/004
D006/D102

Standardization of the

different for different wave types; (2) General application of standard calibrating functions $\sigma(\Delta)$ for body and surface waves as calculated according to the methods recommended by the proponents; (3) Determination of a representative M for each earthquake, to be represented by a simple arithmetic mean of magnitudes of a single wave type as established according to the proposed standard method at many stations. The determination should be done by a proposed international center. As of January 1, 1962, the magnitude M will be determined according to the proposed standard method at all Czechoslovak and Soviet seismological stations. J. Vaněk and J. Stelzner are the personalities mentioned. There are 2 tables and 20 references: 8 Soviet-bloc and 12 non-Soviet-bloc. The references to the four most recent English-language publications read as follows: J. Vaněk, J. Stelzner, The problem of magnitude calibrating functions for body waves, *Annali di Geofisica*, 13, 1960, 39; E. Bisztricsány, On the determination of earthquake magnitudes, *Annales Univers. Sci., Budapest, Sect. Geolog.*, 2, 1959, 39; T. Nagamune, A. Seki, Determination of earthquake magnitude from surface waves for Matsushiro seismological observatory and the relation between magnitude and energy. *Geophys. Mag.*, 28, (1958), 303; Z. Droste, S. Gibowicz, Determination of the magnitude of distant earthquakes at the Silesian geophysical station in Raciborz. *Acta geophys. polon.*,

Card 2/3

SAVARENSKIY, YE. F.

4

S/049/62/000/002/001/005
D218/D301

AUTHORS: Vaněk, J., Zátonek, A., Kárník, V., Kondorckaya, N.V.,
Riznichenko, Yu.V., Savarenskiy, Ye.F., Solov'yev,
S.L. and Shebalin, N.V.

TITLE: Standardization of the magnitude scale

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofiziches-
kaya, no. 2, 1962, 155-158

TEXT: It is pointed out that various magnitude scales are
used at the present time and that their main disadvantage is that
they provide different magnitudes for a given earthquake. This is
because in many cases the methods used to calculate the magnitude
are not clearly defined and are inadequately described. A special
conference of Soviet and Czechoslovak seismologists was convened in
Prague on December 7-14, 1960, to deal with this problem. The aim
of the present paper is to give an account of the main results of
the Prague meeting and to suggest a standard method for determining

Card 1/4

4

Standardization of the magnitude scale S/049/62/000/002/001/005
D218/D301

the earthquake magnitude. It is suggested that the scale should be based on the following standard formula:

$$M = \lg \left(\frac{A}{T} \right)_{\max} + \sigma(\Delta)$$

where A is the maximum displacement amplitude, T is the corresponding period in seconds and $\sigma(\Delta)$ is a calibrating function which describes the variation of A/T with epicentric distance and is different for different types of waves. This formula has been discussed by B. Guterberg and C.F. Richter, and by the first three of the present authors in an earlier work. The calibration function is taken as an average of the Q function of Guterberg and Richter and the β function of J. Vaněk and J. Stelzner. A table is reproduced giving the smoothed average calibrating functions for PH, PV, PPH, and SH waves. In the case of surface waves, the calibrating function is taken to be of the form $\sigma(\Delta) = a \log \Delta + b$. It was found that the coefficients a and b for LH waves are on average equal to 1.66 and 3.3 respectively. This result holds for surface waves at epi-

Card 2/4

4

Standardization of the magnitude scale S/049/62/000/002/001/005
D218/D301

centric distances between 2 and 160°. Below 5°, S_g and L waves must be carefully distinguished. It is pointed out that the problem of defining a single value for M is not yet solved because different average values are obtained for M with different types of waves (M_{LH}, M_{PH}, M_{SH}, and so on). Nevertheless, it was decided not to combine these values as on the unified Gutenberg-Richter scale, but to use the method described above to accumulate a large amount of data and return to the problem of defining an average magnitude later. Beginning with 1962, all stations of Czechoslovakia and the USSR will use the method described in the present paper. There are 2 tables and 20 references: 11 Soviet-bloc and 9 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: J. Gutenberg and C.F. Richter, Ann. Geophys., 9, (1956); Report of the committee on magnitudes 12th General Assembly of the IUGG, Helsinki (1960); J. Vaněk and J. Stelzner, Ann. Geophys., 13 (1960); T. Nagamune and A Seki, Geophys. Mag., 28 (1958).

Card 3/4

4

Standardization of the magnitude scale S/049/62/000/002/001/005
D212/D301

ASSOCIATION: Geofizicheskiy institut Akademii nauk Ch SSR (Geophysics Institute of the Academy of Sciences, Czechoslovak SSR), Geofizicheskiy institut Karlova Universiteta, Praga (Geophysics Institute, Charles University, Prague) and Akademiya nauk SSR, Institut fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth) ✓

SUBMITTED: October 31, 1961

Card 4/4

KARNIK, V.; KONDORSKAYA, N.V.; RIZNITCHENKO, Ju. V.; SAVARENSKY, E.F.;
SOLOVIEV, S.L.; SHEBALIN, N.V.; VANEK, J.; ZATOPEK, A.

Standardization of the magnitude scale of earthquakes. *Studia
geophys* 6 no.1:41-48 '62.

1. Geophysical Institute, Czechoslovak Academy of Sciences,
Praha 4, Bocni II (for Karnik, Vanek). 2. Institute of Physics
of the Earth, Academy of Sciences of USSR, Moskva G-242, B.
Gruzinskaja 10 (for Kondorskaya, Riznitchenko, Savarensky, Soloviev,
Shebalin). 3. Institute of Geophysics, Charles University, Praha 2,
Ke Karlovu 3 (for Zatopek).

TABULEVICH, V.N.; SAVARENSKY, E.F. [Savarenskiy, Ye.F.]

The correlation between microseisms, meteorological situation and sea roughness. Studia geophys 6 no.4:331-339 '62.

1. Institute of Physics of the Earth, Academy of Sciences of the U.S.S.R., Moscow G-242, Gruzinskaja 10.

SAVARENSKIY, Ye. F., prof.

Study of the internal structure of the earth based on seismic
data. Vest. AN SSSR. 32 no.9:134-135 S '62. (MIRA 15:9)
(Earth—Internal structure) (Seismology)

SAVARENSKIY, Ye.F., prof. (Moskva)

Founder of Russian seismology; the 100th birthday anniversary of
academician B.B.Golitsyn. Priroda 51 no.4:92-94 Ap '62.
(MIRA 15:4)
(Golitsyn, Boris Borisovich, 1862-1916)

SAVARENSKIY, Ye.F.

B.B. Golitsyn and some problems in present-day seismology. Izv.
AN SSSR. Ser.geofiz. no.1:3-19 Ja '63. (MIRA 1642)

1. Institut fiziki Zemli AN SSSR.
(Golitsyn, Boris Borisovich, 1862-1916)
(Seismology)

SAVARENSKIY, Ye.F., doktor fiz.-matem.nauk

Scientific session on problems of seismology. Vest.AN SSSR
33 no.2:118-119 F '63. (MIRA 16:2)
(Seismology—Congresses)

SAVARENSKIY, Ye.F., doktor fiz.-matemat.nauk; STAROVOYT, O.Ye.

Elastic oscillations of the globe. Priroda 52 no.3:9-14 '63.
(MIRA 16:4)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR, Moskva.
(Seismology)

SAVARENSKIY, Ye.F.; FEDOROV, S.A.; GOGICHAYSHVILI, B.V.

Determination of the true ground movement and its spectrum on a
seismogram. Izv. AN SSSR. Ser. geofiz. no.9:1340-1347 S '63.
(MIRA 16:10)

1. Institut fiziki Zemli AN SSSR.

GLASKO, V.B.; SAVARENSKIY, Ye.F.; SHECHKOV, B.N.

Data on phase and group velocities of surface seismic waves. Izv.
AN SSSR. Ser. geofiz. no.10:1486-1493 0 '63. (MIRA 16:12)

1. Institut fiziki Zemli AN SSSR.

SAVARENSKIY, Ye.F.

Dependence of the energy flux of Love waves on the period and
depth. Izv. AN SSSR. Ser. geofiz. no.11:1644-1648 N '63.
(MIRA 16:12)

1. Institut fiziki Zemli AN SSSR.

IOSIF, T.; RADU, S.; SAVARENSKIY, Ye.F.

Mechanism of the focuses of certain Carpathian earthquakes. Biul.
Sov. geism. no.15:146-167 '63. (MIRA 17:4)

SAVARENSKIY, Ye.F.

B.B.Golitsyn, founder of Russian seismology, 1862-1916.
B'ul.Sov.po seism. no. 15:3-5 '63. (MIRA 17:4)

L 23447-65 EWT(1)/EWA(h) Feb GW

ACCESSION NR: AP4049241

S/0049/04/000/010/1472/1478

AUTHOR: Savarenskiy, Ye. F.; Fedorov, S.A.; Dzhafarov, R.D.; Ryukimov, L.N.;
Lursmanashvili, O.V.

TITLE: A method for modeling surface waves

SOURCE: AN SSSR. Izvestiya. Seriya geofizicheskaya, no. 10, 1964, 1472-1478

TOPIC TAGS: seismology, seismic modeling, seismic wave, earth crust, seismic sur-
face wave, Rayleigh seismic wave

ABSTRACT: One of the important unsolved problems in seismology is the character of the dispersion of surface waves in a layer of variable thickness and the nature of pseudo-arrivals of short-period surface waves (L_g , L_1 , etc.). However, there is every basis for assuming that problems of this type can be solved by modeling. Accordingly, the authors have formulated the requirements for the modeling of surface wave phenomena. The applicability of different types of models is evaluated. Broad-band oscillation sources and receivers are described, together with a simple method for determining the frequency characteristics of piezoelectric converters on the basis of the reciprocity theorem. Using a single-layer two-dimensional model of the earth's crust, the authors show the influence of the source spectrum on the formation of surface waves. For the first time it has been

Card 1/2

L 23447-65

ACCESSION NR: AP4049241

3

possible to obtain the left (high-frequency) branch of the dispersion curve for Rayleigh wave group velocities. The range of periods investigated was 1-100 seconds; in this range attenuation is $0.01-0.0003 \text{ km}^{-1}$. The similarity test is satisfied by metal two-dimensional models in the corresponding range $1-100 \cdot 10^{-6} \text{ sec}$ having an attenuation of $0.4 \cdot 10^{-7} - 0.6 \cdot 10^{-7} \text{ km}^{-1}$. Such a small attenuation makes it possible to work on long profiles without increasing the intensity of the source. Depending on the character of the formulated problem it is necessary to select different forms of metal two-dimensional models; this problem is discussed for horizontally stratified and nonhorizontal complex strata. "The authors wish to thank V. B. Glasko and Ya. Sh. Granit for valuable assistance in constructing the theoretical dispersion curves for Rayleigh waves." Orig. art. has: 3 formulas and 7 figures.

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

SUBMITTED: 04May64

ENCL: 00

SUB CODE: ES

NO REF SOV: 019

OTHER: 006

Card 2/2

L 63061-65 EWT(1)/EWA(h) Feb GW

ACCESSION NR: AP5017040

UR/0387/65/000/004/0038/0051
550.342.534.2

37
32
B

AUTHORS: Savarenskiy, Ye. F.; Glasko, V. B.; Granit, Ya. Sh.

TITLE: Dispersion curves of Rayleigh and Love waves as applied to two- and three-layered continental earth crust

SOURCE: AN SSSR. Izvestiya. Fizika zemli, no. 4, 1965, 38-51

TOPIC TAGS: earth crust, seismic wave, computer programming, phase velocity, harmonic analysis, surface wave

ABSTRACT: Computer results of dispersion of Love and Rayleigh waves in two- and three-layered earth crust are presented and analyzed. A method of programming for computing phase and group velocities of surface seismic waves is described for a multilayered elastic system. The structure of the earth's crust may be approximated from surface-wave data by observing the dependence of group and phase velocities on period and by comparing this dependence with the theoretically computed dependence as shown graphically by dispersion curves for different models of the crust. The models differ in relative thickness of the layers and in relative velocities of longitudinal and transverse waves in the layers. This article

Card 1/2

L 63061-65

ACCESSION NR: AP5017040

5
represents an effort to show the relationships between wave dispersion and possible layering arrangements, but does not attempt to specify what the actual structure is in any part of the earth. The authors point out, however, that a sedimentary layer of low density creates a sharp gradient in phase velocity. When the relative thickness of this sedimentary layer is 0.1, a horizontal plateau is observed on the dispersion curve of the fundamental frequency, defined by the combined effect of the sedimentary and basic layers. A narrow minimum is present also as a result of the sedimentary layer. A thicker sedimentary layer produces one deep minimum on the curve. The effect is even sharper on curves of the first overtone. A layer with relative thickness of 0.1 produces two narrow and deep maximums and minimums. "In conclusion, the authors consider it their pleasant duty to express thanks to Professor A. N. Tikhonov for valuable and fruitful consultations during work on this problem, to L. I. Chalysheva for aid in selecting the parameters, and to T. N. Drozdova for aid in graphical presentation of the results." Orig. art. has: 12 figures and 17 formulas.

ASSOCIATION: Institut fiziki Zemli Akademiya nauk SSSR (Institute of Terrestrial Physics, Academy of Sciences SSSR); Moskovskiy Gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 12Aug64

ENCL: 00

SUB CODE: E3, DP

NO REF SOV: 010

OTHER: 003

Card 2/2 *llc*

SAVARENSKIY, Ye.F., doktor fiz.-matem. nauk

Session of the European Seismological Commission in Budapest.
Vest. AN SSSR 34 no.1:86 Ja '65. (MIRA 18:2)

YEREMAYEV, Ye.P.; FISHKOV, Ph.D.; AGA-MANR, S.S.

Determination of the group velocities of surface waves.
Izv. AN SSSR, no. 6:77-83, 1965. (MIRA 18:9)

SAVARENSKIY, Ye.F., doktor fiz.-matem.nauk

Problems in modern seismology and a uniform system of seismic observations in the U.S.S.R. Vest. AN SSSR 35 no.7:39-41 JI '65.
(MIRA 18:8)

SAVARENSKIY, Ye.F., doktor fiz.-mat. nauk; SHECHKOV, B.N.

Determining thickness variations in the earth's crust from
the group velocities of seismic waves. Izv. AN SSSR. Fiz.
zem. no.11:63-66. '65. (MIRA 18:12)

1. Institut fiziki Zemli AN SSSR. Submitted June 11, 1964.

L 18477-66 EWT(1)/EWA(h) GW
 ACC NR: AP6010016 (N) SOURCE CODE: UR/0387/65/000/011/0063/0066
 AUTHOR: Savarenskiy, Ye. F.; Shechkov, B. N.
 ORG: Institute of Physics of the Earth, AN SSSR, Moscow (Institut fiziki Zemli AN SSSR)
 TITLE: Detection of variations of thickness of the Earth's crust from group velocities of seismic waves
 SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 11, 1965, 63-66
 TOPIC TAGS: seismic wave, earth crust, shock wave velocity, seismology
 ABSTRACT; This paper describes the principles and application of the method for detecting variations of the thickness of the earth's crust on the basis of the group velocities of seismic waves. In this method crustal structure is determined in a sector between two stations or two ^{12, 14, 55}epi-centers; it can be used for studying crustal structure in mountainous regions where other methods are difficult to use. The case of paths running across Tibet is given special consideration. Orig. art. has: 7 figures, 4 formulas, and 1 table. [JPRS]
 SUB CODE: 08, 20 / SUEM DATE: 11Jun64 / ORIG REF: 001 / OTH REF: 003

64
B

Card 1/1 *g*

UDC: 550.342:550.834

I 24225-66 EWT(1)/EWA(h) GW

ACC NR: AT6010300

SOURCE CODE: UR/3195/65/000/006/0077/0083

AUTHOR: Savarenskiy, Ye. F.; Ragimov, Sh. S.; Aga-zade, S. S.

42
B

ORG: none

TITLE: Determination of group velocities of surface waves

SOURCE: AN SSSR. Mezhdudomstvennyy geofizicheskiy komitet. Seysmicheskiye issledovaniya, no. 6, 1965, 77-83

TOPIC TAGS: Rayleigh wave, earthquake, seismologic station, seismic wave, wave velocity

ABSTRACT: Three analytical methods for determining the group velocities of Rayleigh waves are discussed and the results of their application to the wave dispersion from several earthquakes in the Pacific Ocean are evaluated. The separate determination of velocity for each oscillation, oscillation grouping and parabolic approximation methods were applied to the evaluation of group velocity of earthquakes with epicenters in the equatorial and southern Pacific. Seismic data from each earthquake were evaluated on the basis of seismograms from the Kirovabai and Goris stations separated by a distance of 126 km. The study shows velocity determination by the separate method to be precise and objective. The average thickness of the earth's crust is 36 km for the Caucasus, Kamchatka, and the Kurile Islands, 30 km for the Japan and the Samoan Islands, and 34 km for Santa Cruz and New Britain, the Yellow Sea, and the South China

Card 1/2

2

L 24225-66

ACC NR: AT6010300

Sea. It is concluded that the experimental curves for the dispersion of surface Rayleigh waves do not always lead to the correct evaluation of the mean structure of the earth's crust between an epicenter and the observation station. Orig. art. has: 6 figures, 2 tables, 5 formulas.

SUB CODE: 08,20/

SUBM DATE: 00/

ORIG REF: 003/

OTI REF: 001

Card 2/2 B6G

L 36222-66 EWT(1) GW

ACC NR: AP5018614

SOURCE CODE: UR/0030/65/000/007/0039/0041

AUTHOR: Savarenskiy, Ye. F. (Doctor of physico-mathematical sciences)

33
B

ORG: none

TITLE: Problems of modern seismology and a unified system of seismic observations in the USSR

SOURCE: AN SSSR. Vestnik, no. 7, 1965, 39-41

TOPIC TAGS: earthquake, seismologic station, Rayleigh wave, SEISMOGRAPHY

ABSTRACT: The introduction of a standard system of seismic measurements, the development of a broader net of seismic stations, and better earthquake forecasting are discussed. The better study of the earth's crust can be achieved by introduction of more sensitive seismographs and detailed study of the propagation of the Rayleigh waves. The author states that the unified system of seismic observations and the development of a seismic net, etc., are being put into operation in the USSR and should lead to more reliable earthquake forecasting.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

Card 1/1 *lll*

L 32162-66 EWT(1) GW

ACC NR: AP6010060

SOURCE CODE: UR/0387/66/000/003/0003/0014

AUTHOR: Savarenskiy, Ye. F. (Doctor of physico-mathematical sciences)

40
B

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli Akademii nauk SSSR)

TITLE: The use of body seismic waves in studying the upper mantle of the earth

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 3, 1966, 3-14

TOPIC TAGS: earth crust, seismic wave, Mohorovicic discontinuity, seismic wave propagation, amplitude analyzer, wave velocity, *UPPER MANTLE*

ABSTRACT: A study is made of the upper mantle of the earth and its effect on the development of the earth's crust. Measurements based on seismic body wave propagation were made from the Mohorovicic discontinuity to a depth of 900-1000 km, corresponding to a pressure variation of 20 to 300 thousand atm and a temperature variation of 800 to 2000°. Longitudinal and transverse wave velocity was measured as a function of depth on a hodograph by the Gerglots-Vikhert method. Logarithmic amplitudes, reduced to unity, are given for body waves of magnitude m and for longitudinal and transverse waves as a function of distance. Seismic sections of the earth's crust are shown for different parts of the world, in which wave transmission is given as a function of depth. The Central Atlantic region was mapped out showing different seismoacoustical belts.

Card 1/2

UDC: 550.34:550.311

L 32162-66

ACC NR: AP6010060

Comparisons of data among seismologists indicate disagreement as to velocity gradient and the actual magnitudes of the velocities. It is concluded that a significant gradient exists at a depth of 700-800 km. Orig. art. has: 10 figures, 1 formula.

SUB CODE: 08/ SUBM DATE: 11Jun65/ ORIG REF: 015/ OTH REF: 026

Card 2/2

SS

L 04457-67 EWT(R) GW

ACC NR: AP6030230

SOURCE CODE: UR/0030/66/000/008/0034/0043

AUTHOR: Savarenskiy, Ye. F. (Corresponding member AN SSSR).

ORG: none

TITLE: Possible causes of the Tashkent earthquake

SOURCE: AN SSSR. Vestnik, no. 8, 1966, 34-43

TOPIC TAGS: Tashkent earthquake, earthquake forecasting, tectonic earthquake, regional seismology

ABSTRACT: Although Tashkent was included in an intensity -8 region of the seismic zoning map issued by the Uzbek Academy of Sciences, specialists failed to predict the occurrence of the catastrophic earthquake of 26 April 1966. To improve earthquake-forecasting techniques, the Council on Seismology of the Academy of Sciences USSR has been commissioned to develop new approaches and new methods.

In the Tashkent event the GOST-6249-52 scale was used to measure the intensity of the earthquake while the amplitude of the horizontal motion was determined with an SBM pendulum. Since, however, the Tashkent earthquake was characterized by short-period vertical oscillations, a more precise determination of the intensity could have been made by using an instru-

Card 1/3

UDC: 550.341.2(575.11-20)

6
B

I 04457-67

ACC NR: AP6030230

is conceivable that solar and lunar gravitational forces together with atmospheric pressure changes could have provided triggering action.)

Orig. art. has: 7 figures. [ATD PRESS: 5066-F]

SUB CODE: 08 / SUBM DATE: none / ORIG REF: 007 / OTH REF: 001

Card 3/3 *egh*

ACC NR: AT7003837

SOURCE CODE: UR/3169/66/000/018/0090/0093

AUTHOR: Savarenskiy, Ye. F.; Starovoyt, O. Ye.

ORG: Institute of Physics of the Earth (TsGO, Moscow) (Institut fiziki Zemli)

TITLE: Use of long-period surface seismic waves to study the earth's internal structure

SOURCE: AN UkrSSR. Geofizicheskiy sbornik, no. 18, 1966. Geofizicheskiye issledovaniya stroyeniya zemnoy kory (Geophysical investigations of the structure of the earth's crust), 90-93

TOPIC TAGS: ~~scientific research~~, seismic wave, seismography, seismologic instrument, seismologic station, earthquake, Rayleigh wave, phase velocity

ABSTRACT: The results of processing the seismographic records made by the "Moskva" seismologic station during three very heavy earthquakes (Chile, 1960; Iturup Island, 1963; Alaska, 1964) have made it possible to isolate the long-period Rayleigh waves and to obtain dispersion curves for phase and group velocities for the periods 50 to 450 seconds. The results are plotted, and errors noted. The results are compared with theoretical calculations, but note is made of the fact that the results obtained are not the only answer to the problem. It is possible that the difference between

Card 1/2

ACC NR: AT7003837

observed and theoretical phase velocity values when $T = 200$ to 350 seconds will disappear if absorption is discounted when theoretical dispersion is calculated. Orig. art. has: 2 figures and 1 table.

SUB CODE: 08/SUBM DATE: 08Jul61/ORIG REF: 003/OTH REF: 002

Card 2/2

TARABUKHINA, I.N.; Prinsipalni uchastnye: VORONKOVA, A.T., khimik; SAVARENSKIY,
Yu.I., master

Use of thickeners made from alga meal in printing with vat and
active dyes. Tekst.prom. 25 no.11:71 N '65. (MIRA 18:12)

1. Nachal'nik khimicheskoy laboratorii tkatsko-otdelochnoy
fabriki imeni rabochego F.Zinov'yeva (for Tarabukhina).
2. Laboratoriya tkatsko-otdelochnoy fabriki imeni rabochego
F.Zinov'yeva (for Voronkova, Savarenskiy).

KUDRIN, V.D.; SAVARENSKIY, Yu.S.

Cyclone combustion chamber for small boilers fired with
milled peat. Prom.energ. 16 no.7:21-25 J1 '61. (MIRA 15:1)
(Furnaces)
(Peat)

1. GEHKINA, B.Z., NEKRASOVA, G.D., SAVARI, I.A.
2. USSR (600)
4. Coal-Issyk-Kul' District
7. Survey of the coal deposits of the Issyk-Kul' District from the viewpoint of providing coal to the local enterprises of the Kirghiz S.S.R. (Abstract) Izv. Glav. upr. geol. fon. no. 2: 1947

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

SAVARI, YE A.

137-58-5-9284

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 71 (USSR)

AUTHORS: Savari, Ye.A., Yudina, I.N., Lifshits, A.I.

TITLE: Measures Designed to Reduce Gold Losses in Tailings of Gold Mining Plants (Razrabotka meropriyatiy po snizheniyu poter' zolota v khvostakh zolotoizvlekatel'nykh fabrik)

PERIODICAL: Tr. N. i. gornorazved. in-ta "Nigrizoloto", 1957, Nr 22, pp 150-152

ABSTRACT: An account of work undertaken by certain gold-mining establishments for the purpose of determining the factors responsible for incomplete extraction of Au. Average-weight samples selected from tailings and middlings were inspected for size and shape of the grains of gold; the condition of the Au (covered with a film, free, etc.) and its purity were determined and various other tests were performed. Reasons for increased Au losses are explained and means of reducing them are shown.

I. D.

1. Gold--Production 2. Gold ores--Processing

Card 1/1

S/137/62/000/005/024/150
A006/A101

AUTHORS: Savari, Ye. A., Frolova, A. A., Bandenok, L. I.

TITLE: Experience in flotating fine-grained titanium-zirconium sands of marine origin

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 10, abstract 5G56 ("Sb. materialov po gorn. delu, obogashcheniyu i metallurgii. Tsentr. n.-i. gornorazved. in-t", 1961, no. 6, 70-74)

TEXT: The basic process of concentrating Ti-Zr sands is performed on concentration tables, jigging machines, and screw separators. To finish the collective concentrate, poorly efficient methods of electrostatic and electro-magnetic separations have been used. At the present the use of flotation was started. It was established that the process of collective flotation was successful only if clays and slimes had been fully eliminated from initial sands. At the TsNIGRI Institute a unit was developed making it possible to assure the required desliming in hydrocyclones by 2 stages without employing a second pump. Oxidized petrolatum, preliminarily saponified in a 10% soda solution at 60 - 80°C for one hour, showed satisfactory results as a substitute of oleic acid.

Card 1/2

Experiences in flotating fine-grained ...

S/137/62/000/005/024/150
A006/A101

Several methods are indicated for flotation separation of a collective Ti-Zr concentrate. During subsequent magnetic separation of the frothy product a conditional concentrate was obtained containing 62% ZrO_2 and 1.3% TiO_2 at 80% ZrO_2 extraction from initial sands.

A. Shmeleva

[Abstracter's note: Complete translation]

Card 2/2

SAVARITSKIY, A

N

N/5
622.6
.53
1950

Vvredeniye v Petrokhimiya Izverzhennyki Gornykh Porod (Introduction to the
Petro-Chemistry of Volcanic Rocks) 2 Perer. Izd. Moskva, Akademkniga, 1950.
399 p. Diagr., Tables.
At Head of Title: Akademiya Nauk SSSR.

SAVARITSKIY, A. N. (Akademik)

"The Eruption of the Volcano of Gekla," Nature, 2nd Printing House of the Publ.
Co. of the AS USSR Moscow, No. 4, 1952.

SAVARITSKIY V.A.

CV

1ST AND 2ND ORDERS PROCESSING AND PROPERTIES INDEX

The metamorphism of the pyrites deposits of the "Third International" (San-Donato) in the Middle Urals. V. A. Savaritskiy. *Bull. Acad. Sci. U.R.S.S., Ser. Geol.* 1947, No. 12, 1192; *Chem. Zvest.* 1947, II, 878. The ores formed through dynamometamorphism are assigned to definite stratigraphic horizons. They contain pyrite, chalcopyrite, sphalerite, and bornite. M. G. M.

ADV. SLA METALLURGICAL LITERATURE CLASSIFICATION

REGION SYMBOLISM

SYMBOLS FOR ONLY USE

CELLS TO USE

REGION SYMBOLS

CELLS TO USE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SAVAROVSKIY, MIKHAIL YAKOVLEVICH

11/5
730
.53

Metodika analiza sebestoimosti v gornodobyvayushchey promyshlennosti
(Method of cost analysis in the mine extractive industry) Moskva, Metallur-
gizdat, 1955.

224 p. tables.

"Literatura": p. (223)

SAVAROVSKIY, Mikhail Yakovlevich; YELANSKIY, A.N., otv.red.; IGNAT'YEVA,
L.I., red.izd-va; IL'INSKAYA, G.M., tekhn.red.

[Advance planning in mining enterprises of the nonferrous metal
industries; from an economist's practice] Perspektivnoe plani-
rovanie na gornodobyvainschikh predpriatiakh promyshlennosti
tsvetnykh metallov; iz opyta ekonomista. Moskva, Gos.nauchno-tekhn.
izd-vo lit-ry po gornomu delu, 1960. 312 p. (MIRA 13:6)
(Mining industry and finance)
(Nonferrous metal industries)

GORBATOV, S.; SAVARSKIY, N.

How we train public-spirited instructors. Kryl.rod. 7 no.5:14
My '56. (MIRA 9:8)

1. Predsedatel' Moskovskoy oblastnoy aviamodel'noy seksii (for Gorbato); 2. Starshiy inzhener-inspektor Moskovskogo oblastnogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Savarskiy)
(Airplanes--Models)

SAVARSKIY, N.

85-58-7-10-45

AUTHORS: GorbatoV, S., Chairman of Model-aircraft Building Section, and Savarskiy, N., Senior Engineer-Inspector of the Moscow Oblast DOSAAF Committee

TITLE: The Spartacus Games are On (Idet Spartakiada)

PERIODICAL: Kryl'ya rodiny, 1958, Nr 7, p 10 (USSR)

ABSTRACT: The authors report on the participation of Moscow Oblast Komsomol model-aircraft builders in the Spartacus Games.

ASSOCIATION: Moscow Oblast DOSAAF Committee

Card 1/1 1. Airplanes--Model building--Competitions

SAVARSKIY, N., sud'ya respublikanskoy kategorii

A step taken forward. Kryl. rod. 15 no.9:6 S '64.

(MIRA 18:1)

SAVARTSEV, A.; KANTARIYA, A.; DOBARIN, B.; YEVLENT'YEV, N.; (selo Yegorkino Oktyabr'skogo rayona, Tatarskoy ASSR), OSOTKIN (g.Tyumen');
SHCHERBAKOV (g.Tyumen'); YERDAKOV (g.Tyumen'); VASIL'YEV (g.Tyumen');
RESHETNIK (Tyumen').

In radio clubs of the country. Radio no.12:11-12 D '58.
(MIRA 11:12)

1. Predsedatel' soveta Ryazanskogo radiokluba Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Savartsev). 2. Nachal'nik Kuybyshevskogo oblastnogo radiokluba Dorbovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Kantariya). 3. Nachal'nik radiokluba (for Osotkin). 4. Starshiy inzh.radiokluba (Shcherbakov). 5. Nachal'nik uchebnoy chasti (for Yerdakov). 6. Chleny radiokluba (for Vasil'yev, Reshetnik).

(Radio clubs)

GOFMAN, I.V., professor, doktor tekhn.nauk; SAVASHINSKAYA, V.I., kand.
ekonomicheskikh nauk.

New methods for determining technical and efficiency indices of
steam power plants. Trudy LIEI no.29:32-49 '49. (MIRA 13:5)
(Steam power plants)

SAVASHINSKAYA, V. I.

1265. Osnovnyye voprosy organizatsii khozraschera energeticheskikh tsekhov
promyshlennykh predpriyatiy. L., 1954. 19s. 20 sm. N-vo vyssh dorazovaniya
SSSR. Leningr. inzh.-ekon. in-t. im. Molroval 100 ekz. B. ts--[54-54162_].

SO: Knizhnaya Letopis, Vol. 1, 1955

8 (3)

SOV/112-57-5-10161

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 5, p 83 (USSR)

AUTHOR: Savashinskaya, V. I.

TITLE: On the Problem of Economic Self-Support of Energy Departments at Industrial Plants (K voprosu o khozraschete energeticheskikh tsekhov promyshlennykh predpriyatiy)

PERIODICAL: Tr. Leningr. Inzh. ekon. in-t, 1956, Nr 11, pp 133-141

ABSTRACT: Three current methods of evaluating activities of industrial-plant power departments are analyzed. Shortcomings in the organization of self-supporting power departments that hinder the use of local reserves within industrial power systems are pointed out. Methods are suggested for determining the fulfillment of a plan; the methods are based on mutually-dependent energy output and cost, which, according to the author, meet the self-support requirements.

A. D. R.

Card 1/1

SAVASHINSKAYA, V., prepodavatel'

Awarding premiums to electric engineers at electric power
stations. Sots.trud 4 no.3:123-125 M '59. (MIRA 12:4)

1. Leningradskiy inzhenerno-ekonomicheskii institut.
(Electric engineers)

GOFMAN, I.V., professor, doktor tekhn.nauk; SAVASHINSKAYA, V.I., kand.
ekonocheskikh nauk

Basic problems in the improvement of planning and determining the
operation results of electric stations and power engineering
systems. Trudy LIEI no.29:5-24 '59. (MIRA 13:5)
(Power engineering)

SAVASHINSKAYA, V.I., kand. ekonomicheskikh nauk

Urgent problems pertaining to the bonus system for engineering
and technical work performed at steam power plants. Trudy LIEI
no.29:104-110 '59. (MIRA 13:5)
(Steam power plants) (Wages)

AYZENBERG, B.L.; BOLOTOV, V.V.; BRIL', R.Ya.; GERASIMOV, V.N.; GREKOV, V.I.;
DOVETOV, M.Sh.; KAMENSKIY, M.D.; KLEBANOV, L.D.; KONSTANTINOV, B.A.;
KUZ'MIN, V.G.; LYUBAVSKIY, V.I.; MELENT'YEV, L.A.; MIKHALEV, N.N.;
POLYANSKIY, V.A.; RAZDROGINA, L.A.; SIVAKOV, Ye.R.; STARIKOV, V.G.;
SAVASHINSKAYA, V.I.; SHAYOVICH, L.L.

Igor' Valentinovich Gofman, 1903-1963; obituary. Trudy LIEI
no.51:3-4 '64. (MIRA 18:11)

20082

S/105/61/000/004/001/003
B116/B206

26.2351
AUTHORS: Drozdov, N. G., Kukarin, A. I., Savashkevich, B. S., and
Gorelov, N. I. (Moscow)

TITLE: Electrostatic generator

PERIODICAL: Elektrichestvo, no. 4, 1961, 48-50

TEXT: An electrostatic generator is described, the operation of which is based on the following principle: Plexiglass is always positively charged when brought into contact with polyethylene and Teflon, while Teflon is negatively charged thereby and polyethylene changes the sign of its charge, depending on whether it comes into contact with Plexiglass or Teflon. Dielectrics which are charged only positively or only negatively are called positive and negative dielectrics, respectively. Those which change the sign of their charge are called intermediate dielectrics. For an alternating interaction between the intermediate dielectric and the positive and negative dielectric, respectively, the maximum charge density δ_{max} on the surface is expressed by $\delta_{max} = \epsilon E / 4\pi$, where E is the breakdown strength of the

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Card 1/6

20082

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Electrostatic generator

electric field, and ϵ the dielectric constant of the interspace between rotor and stator. Maximum charge density is obtained much more quickly with an interaction of three dielectrics than with one of only two. Such favorable conditions also result when the intermediate dielectric is displaced from the negative to the positive dielectric. Some consecutive interactions are sufficient for obtaining the biggest possible charge. Electrostatic d-c and a-c generators may be designed on this principle. A schematic representation of an electrostatic d-c generator is shown in Fig. 1. The stator consists of Plexiglass (1) and Teflon (2). The rotor is a Plexiglass cylinder with metal plates (3). The charges on the inner face of the stator are excited by polyethylene brushes (4) mounted on the rotor. The electric field of the stator induces opposite charges on the plates (3). When the plates approach the collectors K_1 and K_2 , the free charges leak off, while the bound charges are retained. After the latter have reached the range of action of the other dielectric, they become additional free charges and amplify the free main charge of the rotor plates. Fig. 3 shows the dependence of the short-circuit current on the position of the collectors and on the direction of rotor movement. If the collectors

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Card 2/6

20082

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Electrostatic generator . . .

are placed at 0 and 180°, the generator polarity changes according to the direction of rotor movement. This can be utilized in dosimetric circuits for accurate voltage adjustment when charging reservoir and feeder capacitors. Fig. 4 shows the characteristics of the generator during charging and discharging of a capacitor of 10^{-7} f. The charging takes place according to an exponential law, the discharging almost according to a linear law. Fig. 5 shows the dependence of the short-circuit current on the rotor speed. Alternating current can also be obtained from the electrostatic generator described. For this purpose it is sufficient to unite all rotor plates into two groups and to connect these to the two contact rings. When using Teflon, Plexiglass, and polyethylene, such generators operate perfectly under hardest climatic conditions at a humidity of up to 98% and temperatures of from -40 to +50°C. There are 5 figures and 3 references: 1 Soviet-bloc.

SUBMITTED: June 23, 1960

Card 3/6

32646

S/105/62/000/001/003/006
E032/E414

9.6150

AUTHORS: Drozdov, N.G., Gorelov, N.I., Savashkevich, B.S.,
Kukarin, A.I. (Moscow)

TITLE: Semiconducting cadmium sulphide detectors of gamma
radiation

PERIODICAL: Elektrichestvo, no.1, 1962, 49-51

TEXT: In 1957, the present authors developed semiconducting detectors ГП-1 (GP-1) whose sensitivity to Co⁶⁰ gamma rays reached 20 μA per 1 r/hr. This work was directed by S.M.Ryvkin. The inertia of these detectors was comparable to that of single crystals of CdS. The semiconducting detectors were produced by sublimation of cadmium sulphide powder on to a heated conducting base which served as one of the electrodes of the detector. The second electrode was deposited by vacuum evaporation on to the cadmium sulphide layer. Technological modifications enabled the present authors to improve the characteristics of these detectors. In the present paper they report the results of measurements of the parameters of the detectors. It was found that the volt-ampere characteristics in the absence of ionizing radiation are unipolar and practically linear between 1.5 and 10 V. The dark
Card 1/4

32646

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E032/E414

Semiconducting cadmium sulphide ...

current at 10 V was found to lie between 25 and 80 μ A. The response of the detectors to gamma radiation is nonlinear and may be represented by

$$I = uK^\alpha \tag{1}$$

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where I is the total current flowing through the detector, U is the potential difference across the electrodes and k and α are constants. For most specimens α was found to lie between 1.1 and 1.6. The CdS detectors may be used with U = 1.5 V for which in most specimens the dark current does not exceed 5% of the current due to gamma rays when the dose rate is 10 r/hr. The sensitivity was measured under steady-state conditions with U = 10 V. For photosensitive layers of surface area 1.5 cm² and thickness 1 mm, the sensitivity of most specimens for Co⁶⁰ gamma rays was 100 to 300 μ A per 1 r/hr. In isolated cases, this figure rose to 500 to 700 μ A per 1 r/hr. It was found that the current was directly proportional to the dose rate up to 500 r/hr. Below 300 keV the sensitivity rapidly increased, and at 90 keV was found to be greater than that for Co⁶⁰ gamma rays by a factor of 15. The variation in the sensitivity may to some extent be
Card 2/4

32646

S/105/62/000/001/003/006
E032/E414

Semiconducting cadmium sulphide ...

counteracted by the use of suitable filters, e.g. 1.5 to 2 mm thick lead plate. The inertia of the detectors was found to be independent of the applied voltage in the range 1.5 to 10 V. Fig.4 illustrates the inertia properties of the detectors. In this figure τ_H is the time for the photocurrent to increase from zero to 0.8 of its maximum value on irradiation (dark current subtracted) and τ_c is the time necessary for the current to fall to 0.2 of the maximum value after the gamma-ray beam has been cut off. These two time constants are plotted in Fig.4 as a function of the dose rate in r/hr. The inertia may be reduced in practice by placing the detector in a permanent radiation field. The stability of the detectors was highest for gold electrodes. The maximum variation in the sensitivity over a period of 5 months was less than 3% of the average value. The corresponding variation in the dark current was 25%. Under humid conditions (humidity greater than 80%) the dark current increased but could be reduced again with the aid of a drying agent. The properties of the detectors were not affected by exposure to a very high dose, e.g. 5×10^7 r at 2.5×10^6 r/hr. It is stated that the main disadvantage of these detectors is their inertia, but it is

Card 3/4

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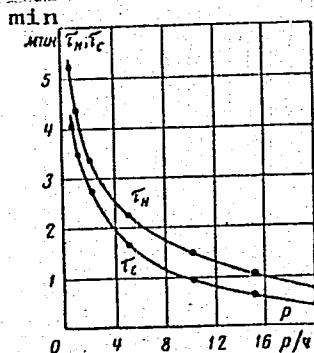
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Semiconducting cadmium sulphide ...

expected that this will be eliminated in the near future. There are 4 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to an English language publication reads as follows: Ref.2: Lewis E., Hollander Jr., Nucleonics, no.10, 1956, 68.

SUBMITTED: December 31, 1960

Fig.4.



Card 4/4

SAVASHKEVICH, V.N.; SEDOVA, A.P., red.

[Shifting freight haulage from railroad to automotive transportation; practice of two transportation junctions] Perekliuchenie perevozok грузов s zheleznodorozhnogo transporta na avtomobil'nyi; opyt dvukh transportnykh uzlov. Moskva, Transport, 1964. 44 p. (MIRA 18:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut avtomobil'nogo transporta (for Savashkevich).

SAVASKEVICH, P. N., Eng.

Electric Motors, Induction

Using 500 V asynchronous electric motors for a voltage of 380 or 320 V. Prom.
energ. 9 no. 9, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

SIVA SOV, Yu. S.

21 537.564
✓ 8685. PROBABILITY OF ELECTRON CAPTURE BY NEUTRAL
ATOMS IN THREE-PARTICLE COLLISIONS Yu. S. SIVASOV
Dokl. Akad. Nauk SSSR, Vol. 113, No. 1, 548-9 (1957). In Russian.
The electron capture coefficient for $e + H + H_2 \rightarrow H^- + H_2$
is evaluated using the experimental data (Abstr. 5952/1956) for
the inverse process. G. E. Brygn

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YERMOLENKO, I.N.; SAVASTENKO, G.N.

Microgram determination of carbonyl groups in cellulosic materials
by means of p-nitrophenylhydrazine from diffuse reflection spectra.
Zhur. anal. khim. 21 no. 1:98-102 '66 (MIRA 19:1)

1. Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk.

S/589/61/000/051/001/008
I054/I254

14550

AUTHORS: Brodskiy, A.D. and Savateyev, A.V.

TITLE: Noise impulse thermometer

SOURCE: USSR. Komitet standartov, mer i izmeritel'nykh priborov. Trudy institutov Komiteta. no. 51 (111). 1961. Issledovaniya v oblasti temperaturnykh izmereniy. 110-115.

TEXT: A modified method of measurement of absolute temperatures is developed using the thermal noise in a resistance, by counting the number of noise impulses per unit of time. The range of measurement is wide, reaching from the point of the thermal destruction of the sensing element down to the region of super-conductivity. The sensitivity increases with decrease in temperature. Care taken to eliminate outside interferences to achieve stability of the equipment. Tests on liquid oxygen showed 0.2°C (average) discrepancy from the international temperature scale. There are 3 figures and 1 table. The English language reference is: Lawson, A.W., Long, A., Phys. Rev., v. 70, No. 3,4,1946, p. 220.

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Card 1/2

Noise impulse...

S/589/61/000/051/001/008
I054/I254

ASSOCIATION: VNIIM

SUBMITTED: November 11, 1959

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Card 2/2

S/589/61/000/051/002/008
I054/I254

24 5500

AUTHOR: Savateyev, A.V.

TITLE: Choice of conditions giving the optimum sensitivity of a thermal noise impulse thermometer and possible ways to determine its constants

SOURCE: USSR. Komitet standartov, mer i izmeritel'nykh priborov. Trudy institutov Komiteta. no. 51 (111). 1961. Isledovaniya v oblasti temperaturnykh izmereniy. 116-130

TEXT: The method of temperature measurement described is based on the properties of noise, created by statistical motion of fundamental electrical elements in a current. This property is utilized by amplification, discrimination and counting of the noise impulses statistically distributed, in time and amplitude. Their number is a function of the temperature. The method has advantages in the measurement of very low temperatures, since the sensitivity increases at low temperatures. If the resistor has no superconductive properties, the method may be used for very low temperatures. The characteristic constants of the instruments are considered in detail, and the optimum

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Card 1/2

Choice of...

S/589/61/000/051/002/008
I054/I254

conditions at which highest sensitivities may be obtained are established by analysis. There are 3 figures.

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ASSOCIATION: VNIM

SUBMITTED: January 4, 1960

Card 2/2

BRODSKIY, A. D.; KREMLEV, Y. V. P.; SAVATEYEV, A. V.

"Nouvelles methodes de realisation de l'echelle thermodynamique
dans le domaine des basses temperatures "
Report presented at the 6th Session of the Advisory Committee
on Thermometry to the International Committee on Weights and
Measures, Sevres, France, 25-27 Sep 62

Institut de Metrologie D. I. Mendelàev (U. R. S. S.)

PA 153117

SAVASTEYEV, V. G.

USSR/Engineering - Circuits, Electric Drives, Electric Nov 49

"Transient Phenomena in the Ionic Electric Drive of Hoisting Equipment," V. G. Savasteyev, Cand Tech Sci, Moscow Mining Inst Iment Stalin, 7 pp

"Elektrichestvo" No 11

In recent years, mining industry has been fitting ionic drives to pit head equipment. Hence, need arises for more extensive research into transient phenomena involved, which would facilitate selection of suitable parameters and rational regulation methods. Examines transient phenomena in starting and also for deceleration and

153117

USSR/Engineering - Circuits, Electric (Contd) Nov 49

regenerative braking with phase regulators rotating at constant speed. Briefly compares results obtained when phase regulators rotate at constant speed and when rectifier voltage is varied linearly. Explains advantages of first method for mine hoists. Includes five diagrams. Submitted 21 Jun 49.

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