PASECHNIK, I.I., inzh.

Investigation of stress-deformed blocks of untouched ore in chamber-mining systems. Izv. vys. ucheb. zav.; gor. zhur. 6 no.9:42-51 '63. (MIRA 17:1)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki. Rekomendovana kafedroy vysshey matematiki.

PASECHNIK, I.I.

Choice of permissible spacings in chamber-and pillar mining. Vest. AN Kazakh.SSR 19 no.10:43-49 O '63. (MIRA 17:1)

PASECHNIK, I.I., starshiy prepodavatel'; RYBASOV, V.I., inzh.

Relationship between the shape of a lateral cross section of a gallery and the state of stress and deformation in the massif. Izv. vys. uch. zav.; gor. zhur. 5 no.6:22-27 '62. (MIRA 15:9)

1. Moskovskiy gornyy institut. Rekomendovana kafedroy vysshey matematiki.

(Rock pressure)

PASECHNIK, I. Kh.

Effect of vitamin B_6 (Pyridoxine) on the bile secreting function of the liver in acute experimental hepatitis in dogs. Farm. i toks. 26 no.5:719-725 N-D '63 (MIRA 18:2)

1. Kafedra farmakologii (zav. - dotsent N.P. Skakun) Ternopol'skogo meditsinskogo instituta.

PASECHNIK, I.Kh.

Effect of folic acid on the secretory function of the liver. Farm. i toks. 28 no.1:105-107 Ja-F '65. (MIRA 18:12)

1. Kafedra farmakologii (zav. - prof. N.P.Skakun) Ternopol'skogo meditsinskogo instituta. Submitted November 25, 1963.

PETROVSKIY, G.A.; ZAPADNYUK, V.I.; PASECHNIK, I.Kh.; SEREDA, A.Ya.; LITVINCHUK, M.V.

Cholagogue effect of Bupleurum exaltatum, Agrimonia asiatica, Leontopodium ochroleucum, and Veronica virginica. Farm. i toks. 20 no.1:75-77 Ja-F '57. (MLRA 10:7)

1. Kafedra farmakologii (zav. - prof. G.A.Petrovskiy) L'vovskogo meditsinskogo instituta.

(BILIARY TRACT, effect of drugs on,
Agrimonia asiatica, Bupleurum exaltatum, Leontopodium ochroleucum, & Veronica virginica, cholagogue action (Rus))

PASECHNIK, I.Kh.

Choleretic action of vitamin P-active preparations. Vrach.delo no.2:153-155 F '60. (MIRA 13:6)

1. Kafedra farmakologii (zav. - dotsent N.I. Skakun) Ternopol'skogo meditsinskogo instituta.
(VITAMINS--P) (LIVER)

EXCERPTA MEDICA Sec.2 Vol.11/1 Physic-Biochem,etc.Jan58

Pasechnik, F. Kh.

338. EFFECT OF THE PROPIONATE OF 4-PHENYL-1:2:5-TRIMETHYL-4-PIPERIDINOL (PROMEDOL) ON LIVER FUNCTION (Russian text). Pasechnik I. Kh. Dept. of Pharmacol., Lvov Med. Inst., Lvov. ~~FARMAKOL. I TOKSIKOL.~~ 1957, 20/1 suppl. (22-23)

The effect of promedol on the volume and composition of bile was studied in dogs with chronic bile fistula and the effect on tone of the sphincter of Oddi was studied in acute experiments on anaesthetized cats. In a dose of 0.3 - 1 mg./kg. promedol caused a decrease in volume of bile secretion with an increase of the concentration of bile salts, a decrease of cholesterol and a rise of the cholate-cholesterol ratio. It slightly raised the tone of the sphincter of Oddi. Its effects on bile secretion were more favourable than those of morphine. Rašková - Prague

PASECHNIK, I.Kh.

Effect of promedol on liver function. Farm.i toks. 19 supplement: 22-23 '56. (MLRA 10:7)

1. Kafedra farmakologii (zav. - prof. Yu.A.Petrovskiy) L'vovskogo meditsinskogo institute

(ANALGESICS, effects,
4-phenyl-4-propoxy-1,2,5-trimethyl piperidine on liver funct. (Rus))
(LIVER, effect of drugs on,
4-phenyl-4-propoxy-1,2,5-trimethyl piperidine (Rus))

PETROVSKIY, G.A. [deceased]; SHUKIN, A.Ya.; PASECHNIK, I.Kh.

Effect of unithiol on the cholagogue function of the liver in experimental (toxic) hepatitis. Farm. i tokс. 22 no.3:274 My-Je '59.
(MIRA 12:7)

(SULFHYDRYL COMPOUNDS, eff.
2,3-dimercaptopropane sodium sulfonate on bile secretion in exper. toxic hepatitis (Rus))

(BILE,
secretion in exper. toxic hepatitis, eff. of 2,3-dimercaptopropane sodium sulfonate (Rus))

(HEPATITIS, exper.
eff. of 2,3-dimercaptopropane sodium sulfonate on bile secretion in toxic hepatitis (Rus))

SKAKUN, N.P.; PASICHNIK, I.Kh.

Mechanism of the cholagogic action of adrenocorticotropic hormone and cortisone. Farm. i toks. 25 no.1:23-28 Ja-F '62.

(MIRA 15:2)

1. Kafedra farmakologii (zav. - doktor med. nauk N.I. Grashchenkov) Ternopol'skogo meditsinskogo instituta.

PASECHNIK, I. Kh

USSR / Pharmacology and Toxicology--Medicinal Plants V-5

Abs Jour: Ref Zhur-Biol., No 23, 1958, 107341

Author : Petrovskiy, G. A., Zapadnyuk, V. I., Pasechnik, I. Kh., Sereda, A. Ya., Litvinchuk, M. V.

Inst : Not given

Title : On the Choleretic Action of Bupleurum Exaltatum, Agrimonia Asiatica, Leontopodium Ochroleucum, and Veronica Virginica

Orig Pub: Farmakol. i toksikologiya, 1957, 20, No 1, 75-77

Abstract: The choleretic action of Bupleurum exaltatum, Agrimonia asiatica, Leontopodium ochroleucum, and Veronica virginica was studied in dogs with gall bladder fistulas and ligated common gall ducts. It was established that Bupleurum exaltatum and Leonto-

Card 1/3 13

USSR / Pharmacology and Toxicology--Medicinal Plants V-5

Abs Jour: Ref Zhur-Biol, No 23, 1958, 107341

44 to 45 milligrams per 100 [there is no indication from which parts of the plants the infusions or decoctions were prepared--editor].

Card 3/3

14

SKAKUN, N.P., dotsent; PASECHNIK, I.Kh., kand.med.nauk

Influence of adenosinetriphosphoric acid and a muscular adenylic preparation on the bile secreting function of the liver. Vrach. delo no.2:56-58 F '61. (MIRA 14:3)

1. Kafedra farmakologii (zav. - dotsent N.P.Skakun) Ternopol'skogo meditsinskogo instituta.

(LIVER) (ADENOSINETRIPHOSPHORIC ACID)

PASECHNIK, I. KH.

USSR/Pharmacology. Toxicology. Analgesics U-3

Abs Jour : Ref Zhur-Biol., No 7, 1958, 32886

Author : Pasechnik I. Kh.
Inst : Not given
Title : Effect of Promedol on Hepatic Function

Orig Pub : Farmakol. i toksikologiya, 1956, (1957), Prilosh, Sb. ref., 22-23

Abstract : Two dogs with chronic fistulas of the gall bladder were administered promedol subcutaneously in doses of 0.33 to 1 mg/kg. A decrease in the quantity of bile and of cholesterine in the bile, an increase in the concentration of bile salts, of bilirubine in the the bile, of the specific weight of the bile and of the coefficient of cholesterine-cholate was noted. In acute experiments on 15 cats which were anesthesized by urethan it was indicated that

Card 1/2

PASECHNIK, I.Kh.

Influence of phenatine on biliation by the liver. Farm. i toks. 24 no.5:562-564 S-O '61. (MIRA 14:10)

1. Kafedra farmakologii (zav. - dotsent N.P.Skakun) Ternopol'skogo gosudarstvennogo meditsinskogo instituta.
(PHENATINE) (LIVER) (BILE)

PASECHNIK, I.Kh. [Paschnyk, I.Kh.]

Effect of promedol on secretory and periodical motor activity of the stomach. Fiziol.zhur. [Ukr.] 5 no.3:393-397 My-Je '59.
(MIRA 12:10)

1. L'vivs'kiy medichniy institut, kafedra farmakologii.
(PIPERIDINE) (STOMACH)

PASECHNIK, I.Kh.; MERIKOVA, Ye.V.

Vitamin E as an anticholeretic. Vop.pit. 18 no.5:39-42 S-O '59.
(MIRA 13:1)

1. Iz kafedry farmakologii (zav. - zasluzhennyy deyatel' nauki USSR prof. Yu.A. Petrovskiy [deceased]) L'vovskogo meditsinskogo instituta i kafedry farmakologii (zav. - dotsent N.P. Skakun) Ternopol'skogo meditsinskogo instituta.
(VITAMIN E pharmacol.)
(BILIARY TRACT pharmacol.)

PASECHNIK, I. KH.

Pasechnik, I. Kh. "The pharmacology of promedol." L'vov State Medical Inst. L'vov, 1956. (Dissertation for the Degree of Candidate in Medical Science)

So: Knizhnaya letopis', No. 27, 1956. Moscow. Pages 94-1[illegible]; 111.

PASECHNIK, I.Kh.

Effect of noradrenalin od Oddi's sphincter tonus. Farm.i toks. 22 no.6:519-522 N-D '59. (MIRA 13:5)

1. Kafedra farmakologii L'vovskogo (zav. - zasluzhennyy deyatel' nauki USSR prof. Yu.A. Petrovskiy [deceased]) i Ternopol'skogo (zav. - dotsent N.P. Skakun) gosudarstvennykh meditinskikh institutov.

(BILE DUCTS pharmacol.)
(ARTERENOL)

SKAKUN, N.P.; [illegible], I.M.

Wild strawberry as a cholagogue. Vop. pit. 23 no.5:75-[illegible]

1. Kafedra farmakologii (zav. - prof. N.P.Skakun) Ternopol'skogo meditsinskogo instituta.

PASECHNIK, I.Kh.; [illegible], I.A.; [illegible]

Phagocytic activity of [illegible] cytes during the treatment of experimental hepatitis with vitamin B_6. Biul. eksp. biol. i med. 59 no.[illegible] [illegible]. (MIRA [illegible])

1. Kafedra farmakologii (zav. - prof. N.I. Skakun) i kafedra mikrobiologii (zav. - [illegible]) Ternopol'skogo gosudarstvennogo [illegible] (for [illegible]).

GAMBURTSEV, G.A.; RIZNICHENKO, Yu.V.; BERZON, I.S.; YEPINAT'YEVA, A.N.; PASECHNIK, I.P.; KOSMINSKAYA, I.P.; KARUS, Ye.V.; YEROFEYEVA, A.A., redaktor; KISELEVA, A.A., tekhnicheskiy redaktor

[Correlation method of refracted waves; manual for seismological engineers] Korreliatsionnyi metod prelomlennykh voln; rukovodstvo dlia inzhenerov-seismorazvedchikov. Moskva, Izd-vo Akad. nauk SSSR, 1952. 238 p. [Microfilm]. (MLRA 8:7)

1. Chlen-korrespondent AN SSSR (for Gamburtsev).
(Seismometry)

PASECHNIK, I. P., [redacted]

USSR/Geophysics - Geophysical Prospecting Nov/Dec 50
Seismographs

"Vibration Platform for Studying Seismographs Used in Geophysical Prospecting," I. P. Pasechnik, Geophys Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geograf i Geofiz" Vol XIV, No 6, pp 514-530

Describes inertial vibration platform constructed from design by Yu. V. Riznichenko for recording frequency and phase responses of modern vertical prospecting seismographs in frequency range 5 - 3,500 cps. Tested electrodynamic seismographs, and established several resonances at high frequencies [redacted].

171T65

USSR/Geophysics - Geophysical Prospecting (Contd) Nov/Dec 50

caused by natural transverse oscillations of flat springs loaded by coil at ends. Submitted by Acad O. Yu. Shmidt 10 Apr 50.

171T65

PASECHNIK, I. P.

USSR/Geophysics - Seismology Jan/Feb 52

"Procedure for Experimentally Studying Resonance Phenomena in the Oscillatory System Soil-Seismograph," I. P. Pasechnik, Inst of Geophys, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geofiz" No 1, pp 21-34

Describes devised techniques applied to subject study as well as procedure for processing of results. Cites examples of observed frequency and phase resonance curves and of recorded natural oscillations of the system "soil-seismograph," obtained under various conditions.

205T39

USSR/Geophysics - Resonance Phenomena in Soil-Seismograph System May/Jun 52

"Results of Experimental Study of Resonance Phenomena in the Oscillatory System Soil-Seismograph," I. P. Pasechnik, Geophys Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geofiz" No 3, pp 34-57

Expounds results of an exptl study of the dependence of resonance properties of the oscillatory system soil-seismograph upon its parameters: velocity of propagation of longitudinal waves in soil and soil's density, and wt and area of seismograph's base. Presents data on influences of various methods of setting up a seismograph upon resonance properties of the system soil-seismograph.

224T70

Indicates influence of phenomenon of resonance in the system upon the character of seismic recordings and upon resolving capacity of seismic methods. Indicated various methods for setting up seismographs for various surface conditions, under which methods the resonance phenomena are absent or weakly expressed. Submitted 30 Dec 51.

224T70

PASECHNIK, I.P.

PASECHNIK, I. P.

USSR/Geophysics - Seismology Sep/Oct 52

"Comparison of Results of Theoretical and Experimental Investigations of Resonance Phenomena in the System: Soil-Seismograph," I. P. Pasechnik, Geophys Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geofiz" No 5, pp 25-46

Dependence of resonant properties of the oscillating system: soil-seismograph on soil parameters, density and velocity of propagation in the soil, and wt and radius of seismograph base is investigated theoretically. Comparison of theoretical frequency and phase

226T62

resonance curves of the system with experimental ones, obtained under various conditions, is drawn. Article states that these curves agree satisfactorily. The effect of resonance phenomena of the system on seismic recording is shown. Received 5 Jun 52.

226T62

PASECHNIK, I.P.

FD-1191

USSR/Geophysics - Properties of Rocks

Card 1/1 Pub. 45-2/8

Author : Karus, Ye. V., and Pasechnik, I. P.

Title : Study of the elastic and absorbing properties of rocks in their natural surroundings by methods of seismoacoustics

Periodical : Izv. AN SSSR, ser. geofiz., No 6, 1954, pp 515-526

Abstract : The authors briefly describe the physical principles of their apparatus, technology and method of field observations for determining the elastic and absorbing properties of rocks in their natural surroundings. Their method is based on a study of the propagation in rocks of elastic stationary sinusoidal oscillations with frequencies from 50-100 to 3000-4000 cycles, which are excited by electromagnetic or piezoelectric vibrators of low power (of the order of 50 v). Using this method they determine the phase velocity of the propagation of elastic stationary sinusoidal oscillations as well as the values of the coefficients of amplitude absorption of these oscillations.

Institution : Geophysics Institute, Acad. Sci. USSR

Submitted : March 6, 1954

PASECHNIK, I. P. FD-1713

USSR/Geophysics - Physics of the Earth

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

Authors : Karus, Ye. V., and Pasechnik, I. P.

Title : On the nature of elastic waves excited in real media by a harmonic source

Periodical : Izv. AN SSSR, Ser. geofiz., 89-100, Mar-Apr 1955

Abstract : On the basis of an analysis of experimental materials obtained in various seismological conditions the authors examine the question of the nature and properties of elastic oscillations excited in real media by a harmonic source. They show that these oscillations have a complex character and are the result of the superposition of waves of various types - longitudinal, transverse and surface waves. The longitudinal waves are not predominant as regards intensity; the transverse or surface waves turn out to be predominant.

Institution : Geophysical Institute, Academy of Sciences USSR

Submitted : June 16, 1954

PASECHNIK, I. P.

USSR/Physics of the Earth - General Problems, O-1

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36291

Author: Paseohnik, I. P.

Institution: None

Title: Azimuthal Four-Component Installation with Inclined Seismographs

Original Periodical: Izv. AN SSSR, ser. geofiz., 1956, No 3, 285-289

Abstract: Description of an azimuthal 4-component installation with inclined seismographs, intended for the recording of local earthquakes. The installation was used in work of the Khaitsk epicentral zone of the Garmsk Oblast. The advantages of recording with 4-component installation with inclined seismographs over recordings obtained with ordinary 3-component installations with 2 horizontal seismographs and one vertical one are described.

Card 1/1

PASECHNIK, I.P

USSR/Physics of the Earth - Seismology, O-3

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36360

Author: Ventskevich, Ye. V., Pasechnik, I. P., Fedoseyenko, N. Ye.

Institution: None

Title: Application of a Driven Sweep in the Recording of Seismic Vibrations

Original Periodical: Izv. AN SSSR, Ser. Geofiz., 1956, No 5, 525-533

Abstract: Description of a method and apparatus for a multi-channel photographic recording of seismic vibrations, the time of arrival of which is unknown beforehand, with the speed of the sweep being capable of being raised to 50 mm/sec. The method is based on using a driven sweep in the registers, automatically switched in at the instant that the first pulse of a vibration arrives at the seismograph.

Card 1/1

PASECHNIK, I.P.

Study of the seismic character of the Khait epicentral zone.
Izv.AN SSSR Ser.geofiz.no.12:1427-1438 '56. (MIRA 10:10)

1. AN SSSR, Geofizicheskiy institut.
(Khait--Seismology)

PASECHNIK, I.P.

Selecting optimum conditions for arranging seismographs and wave-generating apparatus in seismoacoustics. Trudy Geofiz.no.35:159-175 '56. (MLRA 10:1)

(Seismology)

PHOENIX, I. P., [illegible]

"[illegible]"

Paper presented at [illegible]
Available in library

49-1-13/16

AUTHORS: Pasechnik, I.P. and Fedoseyenko, N.Ye.

TITLE: Electrodynamic Microbarograph with Galvanometer Recording (Elektrodinamicheskiy mikrobarograf s gal'vanometricheskoy registratsiyey)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 1, pp 121-130 (USSR)

ABSTRACT: A description is given of a microbarograph which has been developed by the authors of this paper and also of its calibration and examples are given of recordings of microfluctuations of the atmospheric pressure within a wide range of periods of 2-3 sec to 15-20 min. Furthermore, examples are given of the interrelations between such microfluctuations and certain seismic and meteorological phenomena. The microbarograph is produced in two variants, in one of which the sensitive element is an elastic membrane covering one of the walls of the hollow hermetic chamber, in the other the sensitive element consists of a conglomeration of "vidi" boxes. The first-mentioned variant consists of a hermetic chamber of 28 000 cm^3 volume, one of the walls of which is covered by an elastic membrane of circular shape made of 0.1 mm thick phosphor bronze; at the centre of the membrane a light rod is fixed

Card 1/2

AUTHOR: Pasechnik, I.P. SOV/49-58-9-8/14

TITLE: Seismic and Aerial Waves Originated by Eruption of the Volcano Bezymyannyy on March 30, 1956 (Seismicheskiye i vozdushnyye volny, voznikshiye pri izverzhenii vulkana Bezymyannyy 30 marta 1956 g)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 9, pp 1121 - 1126 (USSR)

ABSTRACT: The volcano Bezymyannyy (Kamchatka) was considered as extinct until 1955 when, for the first time, some seismic activities were recorded. Later, on March 30, 1956, at 06.11 hours GMT an energetic eruption took place, together with a local earthquake. The eruption, which had a character of the strong detonation produced the aerial waves which travelled round the earth. They were recorded by the seismic stations of the USSR and abroad.
The seismic waves were also recorded. Table 1 was compiled from these recordings, one of which is shown in Figure 1 (a - longitudinal wave registered at 2 250 km, b - surface wave - 6 600 km). The exact position of both the epicentre and the focus could not be established due to various circumstances. The energy (E), was calculated from the formula (1) as $10^{16} - 10^{17}$ ergs, which

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Seismic and Aerial Waves Originated by Eruption of the Volcano Bezymyanyy on March 30, 1956

represents the magnitude much higher than that of the strongest known eruption of Mikhara volcano (Japan) in 1953-1954. The data of the aerial waves, as registered by the various stations, is given in Table 2. The travel of the waves around the Earth and the position of some of the observing stations are shown in Figure 2. The photographic copy of the recordings are shown in Figures 3 and 4. The characteristic shape of the first wave was recorded at every station (this shows a phase of compression with general quasi-sinusoidal form). The first half-period of the vibration was 8 min, while the next one lasted 10-12 min. The maximum air pressure was 250-300 bar. The velocity of wave travel was 295-333 m/sec. The variations of velocity were caused by the meteorological conditions.

The second wave, recorded at the distance of 37 750 km was of a similar character as the first. Its velocity was 318 m/sec. The third wave (Figure 4e) also of the same character, had a velocity of 313 m/sec. It was established that a peculiar character of the waves was

Seismic and Aerial Waves Originated by Eruption of the Volcano Bezymyanyy on March 30, 1956

caused by the first abrupt discharge of gases.
The energy of the aerial waves was calculated by means of the Whipple formula as being equal to 10^{23} ergs. When taking this energy as being only 0.1 of that of the eruption, it can be assumed that the latter was equal to an equivalent of several tens of million tons of TNT.
The aerial energy of the above and other eruptions could be determined more closely if the observation stations situated in the active regions were equipped with more precise microbarographs.
There are 4 figures and 2 tables and 11 references, 6 of which are Soviet, 4 English and 1 French.

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

SUBMITTED: March 6, 1957

Card 3/3

MONAKHOV, F.I.; PASECHNIK, I.P.; SHEBALIN, N.V.; PODOL'SKIY, A.D., red.; MAKUNI, Ye.V., tekhn.red.

[Seismic and microseismic observations at Soviet stations during the International Geophysical Year] Seismicheskie i mikroseismicheskie nabliudeniia na sovetskikh stantsiiakh v period MGG. Moskva, Izd-vo Akad.nauk SSSR, 1959. 37 p. (MIRA 12:7)

(International Geophysical Year, 1957-1958)
(Seismology--Observations)

S/049/59/000/03/014/019

AUTHOR: Pasechnik, I. P.

TITLE: Long-Period Air Waves Occurring Before a Storm

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 3, pp 471-475 (USSR)

ABSTRACT: This type of wave was recorded by sensitive microbarographs at various seismic stations in USSR. Examples of records are illustrated in Figs 1, 2 and 4. The periods of waves were 4 to 12 minutes, the maximum amplitudes were 100 to 200 bars (sometimes 500-600 bars) and the durations were usually 20 to 30 minutes (see Table on p 471). These records can be compared with those of air waves produced by the eruption of the volcano Bezymyanny illustrated in Fig 3. Fig 5 illustrates the vibrations of the ground generated by air waves propagated in front of a thunderstorm and recorded by a horizontal seismograph (type SGK) designed by D. P. Kirnos. It is suggested

Card 1/2

S/049/59/000/03/014/019

Long-Period Air Waves Occurring Before a Storm

that in order to explain the nature of these air waves more systematic observations should be carried out by meteorologists. There are 4 figures, 1 table and 8 references, 3 of which are Soviet, 3 English and 2 German.

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

SUBMITTED: July 30, 1957

Card 2/2

SOV/49-59-11-19/2

AUTHOR: Pasechnik, I. P.

TITLE: Aerial Waves Produced by the Gobi-Altay Earthquake on December 4, 1957

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya 1959, Nr 11, pp 1687-1689 (USSR)

ABSTRACT: The waves were recorded by the micro-barographs EDMB-I and EDMB-II (described by Pasechnik in Ref 7) the sensitivity of which was 2 and 7 bar/mm/m respectively. They were placed at the epicentric distance of Δ = 2440 km (a temporary observation point). An example of the oscillogram recorded is reproduced in Fig 1. The times of wave generation, as calculated by different seismic stations, are given in Table 1. The entering times recorded by the observation point are given in Table 2. The velocity of wave propagation was determined as v_B = 320 m/sec. The energy was calculated as 10^{17} ergs, ie, it was 10^7 times less than that of seismic waves. There are 1 figure, 2 tables and 11 references, 7 of which are Soviet and 4 English.

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

SUBMITTED March 11, 1959

S/049/59/000/12/016/027
E131/E391

AUTHORS: Poaechnik, I.P. and Fedoseyenko, N.Ye.

TITLE: Experiments with the Improved Seismographs, Types SVK and SGK

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 12, pp 1853 - 1860 (USSR)

ABSTRACT: The seismographs SVK and SGK, generally used in the USSR for recording the longitudinal, transverse and surface waves, are not sufficiently precise for recording weak earthquakes of a magnitude $M \sim 4$. The author, therefore, designed the new improved types, SVK-M and SGK-M, which are illustrated in Figure 1. Their characteristics are tabulated in Table 1. The constants of these new seismographs, as used at the stations of the Soviet zone of the Antarctic, are given in Table 2 and Figure 2. As an example, the SVK-M seismograms are compared with those obtained with SVK (Figure 3). Figure 4 shows an example of the P-wave obtained with the seismograph SVK-M at the distance $\Delta = 2\,650$ km from an underground detonation of 1 000 tons of explosives ($M \approx 4$). Figures 5 and 6 show seismograms of two earthquakes recorded by the

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S/049/59/000/12/016/027
E131/E391

Experiments with the Improved Seismographs, Types SVK and SGK

seismographs SVK (a) and SVK-M (б and B).
There are 6 figures, 2 tables and 8 Soviet references.

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

SUBMITTED: April 1, 1959

Card 2/2

~~3 (10)~~ 3.9300

68160

SOV/20-129-6-22/64

AUTHORS: Kogan, S. D., Pasechnik, I. P., Sultanov, D. D.

TITLE: Difference in the Periods of Seismic Waves Which Are Excited in Underground Explosions and in Earthquakes

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 6 pp 1281-1284 (USSR)

ABSTRACT: The authors compare the data on the predominating periods of seismic vibrations in explosions and in surface earthquakes of equal intensity. On December 19, 1957, at 4.00 A. M. Greenwich time, 1000 tons of ammonite were exploded 30 km southeast of the railroad station of Arys' (Tashkent line) (φ = 43°20'30", λ = 69°03'02",59 E) for scientific purposes. This charge was fixed in a depth of 40 m in a shaft chamber (in clay layers). On March 25, 1958 3100 tons of ammonite were exploded at 9.00 A. M. Greenwich time in the rayon of Pokrovsk Uralsk (φ = 60.2°N, λ = 59°,9 E) for the purpose of blasting at a river channel of, together, 1100 m. In the USSR the explosions were recorded by broad-band seismographs designed by S.L. Krylov (SK), by more sensitive modernized seismographs, and also

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Difference in the Periods of Seismic Waves Which [illegible] 30[illegible]
Are Excited in Underground Explosions and in Earthquakes

other instruments. The present paper is based mainly on measurements with SK. In the case of underground explosions all types of waves were recorded which are excited in the case of earthquakes with their origin in a granite layer. At the stations with epicentral distances of up to 1000 km, the following front waves broken on the boundaries of the Earth's crust were recorded in the explosions: sedimentary layer - granite layer ($\overline{P},\overline{S}$), granite layer - basalt layer (P^*, S^*), the Mohorovičić boundary (P_n, S_n) and also surface waves. Ye. M. Batovskiy et al (Ref 1) wrote a report on the hodographs of volume waves produced by heavy explosions and on the structure of the earth's crust in (Soviet) Central Asia. At epicentral distances of more than 1100 km direct longitudinal waves P, direct transversal waves S, and also surface waves G were recorded. Pictures of the recorded waves are shown in figure 1. At the same epicentral distance the period of the surface wave in the explosion is 5 times as small as the period of a surface wave in an earthquake. The authors also dealt with earthquakes near the surface which were recorded at the station Frunze during the first half year.

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68160

Difference in the Periods of Seismic Waves Which Are Excited in Underground Explosions and in Earthquakes

Accordingly, the periods of volume waves do not or only slightly depend on the epicentral distance, on the depth of the center, and on intensity. In the case of epicentral distances of from 100 to 1000 km the periods of the longitudinal waves in most cases are 0.6 to 2.0 sec, in explosions 0.2 to 0.8 sec. The periods of transversal earthquake waves at epicentral distances of up to 1000 m are from ~1 to approximately 3 - 4 sec. In surface waves recorded by a broad-band seismograph of the type SK the difference in the periods of earthquakes and explosions is the greatest. V. I. Keylis-Borok (Ref 1) presumed that surface waves in explosions must have smaller periods because of the difference in center dimensions than surface waves in earthquakes, providing that the periods of body waves and their energy are equal in both cases. This conclusion is confirmed by other considerations. The data obtained here furnish a new criterion for the purpose of clearly distinguishing between explosions and earthquakes. There are 4 figures and 4 references, 3 of which are Soviet.

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68160

Difference in the Periods of Seismic Waves Which Are Excited in Underground Explosions and in Earthquakes SOV/20-129-6-23/69

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

PRESENTED: September 16, 1959, by N. N. Semenov, Academician

SUBMITTED: September 16, 1959

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9.9865 also 2406 2606

3.9300

26981 S/049/60/000/012/005/011
D214/D305

AUTHOR: Pasechnik, I.P.

TITLE: On determining the attenuation parameters of P_n and S* waves

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 12, 1960, 1740 - 1743

TEXT: The variation in the amplitude of seismic waves with the epicentric distance is of major importance in detecting and identifying underground nuclear explosions. The attenuation properties of these waves can be established experimentally from seismic observations obtained for nuclear explosions or ordinary "chemical" explosions, since both types give rise to similar seismic records. The present author makes use of data for the underground nuclear explosions set off in the USA, and TNT explosions set off in the USSR, to estimate the attenuation parameters of P_n and S* waves.

The amplitude attenuation of longitudinal and transverse head wa-

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On determining the attenuation ...

ves in a perfectly elastic medium can be represented by the formula

$$A_i = \frac{A_0}{\left(\frac{\Delta_i}{\Delta_0}\right)^q} \qquad (1)$$

where A_i and A_0 are the amplitude at the point of observation and a point nearer the epicenter respectively, and Δ_i and Δ_0 are the corresponding epicentric distances. Experimental and theoretical work on the amplitude attenuation of head waves has shown that in a real medium the variation in the amplitude of head waves with the epicentric distance may be represented by an expression of the form

$$A_i = \frac{A_0 e^{-\alpha(\Delta_i - \Delta_0)}}{\left(\frac{\Delta_i}{\Delta_0}\right)^n} \qquad (2)$$

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On determining the attenuation ...

According to I.S. Berzon (Ref. 5: Izv. AN SSSR, Ser. geofiz., No. 4, 1951) the average value of n approaches 2, the limiting values being 1.5 and 2.5. The present author finds that in the case of the 5 and 19 kiloton nuclear explosions (Romney, Ref. 2: J. Geophys. Res., 64, No. 10, 1959) and the TNT explosions reported in (Ref. 1: I.P. Pasechnik, S.D. Kogan, D.D. Sultanov, and V.I. Tsibul'skiy, Tr. In-ta fiziki Zemli, AN SSSR, No. 15, 1960) the values of n and α are as follows: For P_n waves with periods between 0.6 and 0.8 sec the average value of n is approximately 2.0 and the average value of α is 0.0022 km^{-1}; for S* waves with periods between 1.0 and 1.2 sec the values of n and α are ~1.7 and 0.0023 km^{-1} respectively. These values were determined by direct fit of the theoretical curve to the observed experimental curve and also by the method described by Yu. V. Riznichenko (Ref. 6: Tr. Geofiz. In-ta AN SSSR, No. 35, 1956). The two methods lead to values for n and α which are in close agreement. The present paper is said to be a first attempt to use the methods developed for seismic prospecting in determining n and α for P_n waves. In principle, the method may lead to more accurate values

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On determining the attenuation ...

for α and n, e.g. when more complete experimental data become available. There are 1 figure, 1 table and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: C. Romney, Amplitudes of seismic body waves from underground nuclear explosions, J. Geophys. Res. 64, No. 10, 1959; B. Gutenberg, Bull Seism. Soc. Amer., 35, No. 2, 1945; C.F. Richter, Bull. Seism. Soc. Amer., 25, No. 1, 1935.

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

SUBMITTED: May 21, 1960

32021
S/619/6[illegible]
D039/D112

3.9300 (2406, 1019, 1109, 1327)

AUTHORS: Pasechnik, I.P., K[illegible], [illegible], Sultanov, D.D., [illegible]

TITLE: Results of seismic observations during underground [illegible] trinitrotoluene explosions

SOURCE: Akademiya nauk SSSR. [illegible] fiziki Zemli. Trudy, no. [illegible] Seysmicheskiy effekt [illegible] vzryv[illegible] (19[illegible]): Moscow, [illegible] 3-5[illegible]

TEXT: The authors analyze [illegible] made chiefly in [illegible] conducted in the USA [illegible] the USSR, of underground [illegible] Rainier, Tamalpais, Logan and Blanka [Abstracter's note: [illegible] could not be defined] [illegible] names of Rainier, Tamalpais and Blanka could not be defined [illegible] English rendition of Tamalpais [illegible], and underground trinitrotoluene explosions [illegible] Arys' [illegible] site in Nevada in 19[illegible] and 1958 [illegible] on December [illegible] carried out in the Kazakh [illegible] (Tashkent Railroad) [illegible] examine the [illegible] the Arys' [illegible] Troitskiy in March 1[illegible], 19[illegible], in order to [illegible] and identifying and [illegible] were [illegible] at Soviet [illegible] Blanka and Logan explosions

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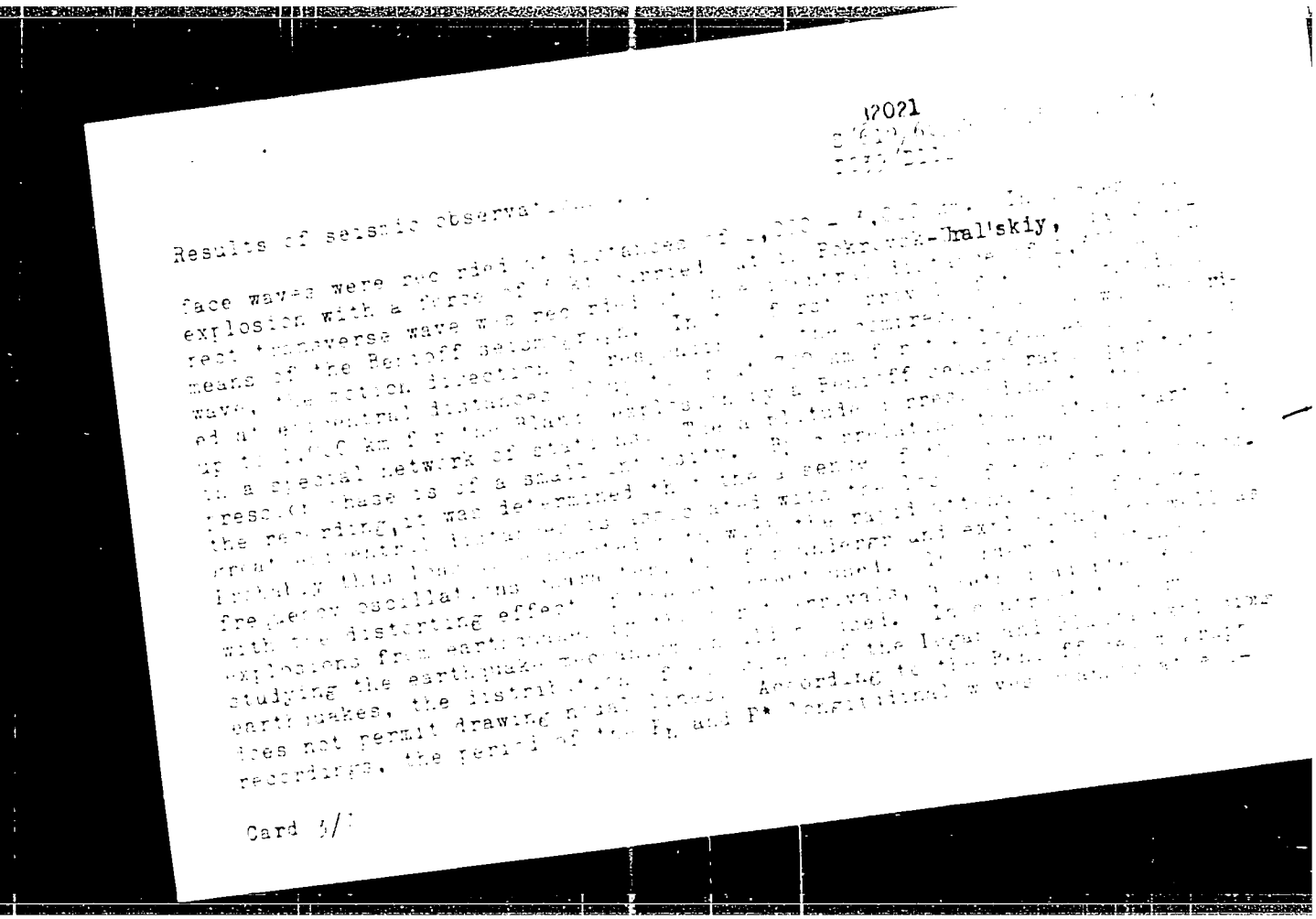
Results of seismic observations ...

... with the aid of СВК-М (SVK-M) ... of seconds. Seismograms obtained by СВК (SVK), ЕГК (EGK) and ЕГК-М (EGK-M) and sometimes were also used in ... seismographs have been ... (Ref. 5: "Inv. AN SSSR, Seriya geofiz.", N 12, 1959.) and P.I. ... I.P. Pasechnik and M.V. Stekhin (Ref. 1: Soobshcheniya stantsii SCP rabotayushchie po ... the IGY program], Izd-v AN SSSR, 1959.). The authors ... vibrations produced by these explosions can be detected at ... tances from the place of explosion. Two nuclear explosions ... 10 kt were detected at ... SVK-M seismograph, and ... 9,000 km (by means of the Benioff seismograph). In ... P_n longitudinal waves were recorded at epicentral ... km, the P waves at 1,2... - 10,10... km and the PKP waves - at ... distance of more than 14,... km (at the Soviet seismic ... and the Mirnyy Oasis in the Antarctic). In the case of ... the S and S* transverse waves were identified on the record... off seismograph within an epicentral-distance range of 2... -

Card 2/...



Results of seismic observa[illegible]

face waves were rec[illegible] ... Bakhmut-Bal'skiy, explosion with a charge of [illegible] rect transverse wave was rec[illegible] means of the Bertoff detector. In [illegible] wave, the motion direction [illegible] ed at epicentral distances [illegible] up to 1,500 km from the blast. [illegible] in a special network of stati[illegible] respective phase is of a small [illegible] the recording it was determined th[illegible] area. Initially this [illegible] frequency oscillations [illegible] with the distorting effect [illegible] explosions from earthquakes [illegible] studying the earthquake [illegible] earthquakes, the distri[illegible] does not permit drawing [illegible] recordings. The period of [illegible]

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central distances of 2[illegible] - 1,0[illegible] km from [illegible]
atomic explosions, and [illegible]
to .8 seconds during [illegible]
approximately the same energy level, the period varies between
seconds (according to records [illegible]
case of atomic explosions, however, [illegible]
from 0.4 to 1.2 seconds at epicentral distances of [illegible]
seismographs. During earthquakes of approximately the same energy level
this period changes from 1 to 4 seconds at epicentral distances
1,000 km (U.S. Birkis seismograph). Consequently, in earthquakes
the periods of the volumetric waves are somewhat shorter
of the same energy level. The Benioff seismograph records
during atomic explosions the period of the surface waves
tances of [illegible] km
0.7 - 1 seconds. At epicentral distances
seconds were recorded on seismograms made with a Wiechert
Benioff seismograph.

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S/619/60/000/015/001/004
D039/D114

Results of seismic observations ...

by the D.P Kirnos seismograph during chemical explosions [illegible] the same energy level showed that these periods are essentially different. During chemical explosions this period equals 0.0 ± 0.5 seconds and [illegible] varies with distance. At an epicentral distance of about [illegible] times shorter than the surface-wave period in earthquakes. A curve representing the dependence of the surface-wave period in [illegible] earthquakes is expressed as [illegible] Shebalin (Ref. 12: "Izv. AN SSSR ser. geofiz.", No. [illegible], 1955) by the formula $T \approx 0.85\sqrt{\Delta}$. This curve and a corresponding curve for the Arys' explosion are given in the paper. Observations [illegible] with this dependence. It is of [illegible] as one of the criteria for discrimination of explosions from earthquake recordings. The character of the change in [illegible] plitude with an increase of the epicentral distance is different for [illegible] waves. For atomic explosions with a period T = 0.5 ± [illegible] wave amplitude decreases with distance according to the law

$$A_1 \approx A_0 \left(\frac{\Delta_1}{\Delta_0}\right)^{-n} e^{-\gamma(\Delta_1 - \Delta_0)},$$

Card [illegible]

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Results of seismic observations ...

For the P wave, the character of the ... more complicated. With a range of 1.2 ... are less than the values at large epicentral distances; ... persion of these values was observed in the ... wave, the maximum amplitude value was found at a distance ... after which it gradually decreased with an increase in the epicentral distance. A detailed analysis of these changes of the amplitude of ... was conducted by Yu. V. Riznichenko (Ref ... : O seysmicheskom metode izucheniya podzemnykh yadernykh vzryvov [On the seismic method of studying underground explosions] in the present source, ...). During both of the underground explosions, the ... the recorded waves, the ... the same. Ignoring the ... the explosion, the seismic effect ... 2-4 times greater than ... of the efficiency ... series of similar explosives. Discussion ...

Card 6/7

32021

Results of seismic observations ...

coordinates, ... [illegible] ... Released by Ya.F. ... [illegible]

11: Ye. F. Savarenskiy, D.P. Kirnos. Elements of seismology and seismometry], 2 [illegible]

locating an earthquake [illegible]

arrivals [illegible] of the P longitudinal waves at three seismic stations. [illegible]

of the epicenter [illegible] of the Blanca and Logan explosions on the basis [illegible]

of stations surrounding the epicenter is determined over an area of [illegible]

by using the averaged Jeffreys-Bullen hodograph, i.e. when the real [illegible]

graph is unknown. If the real hodograph is used, the accuracy [illegible]

tion of the epicenter determination should be increased. V.I. [illegible]

is mentioned. There are 2[illegible] figures, 2[illegible] tables and 35 references: [illegible]

bloc and 22 non-Soviet-bloc. The four most recent references [illegible] English-

language publications read as follows: AEC Releases Data on Hardtack I [illegible]

Tests, Tuesday, March 26, 1959.; Disarmament and Foreign Policy [illegible]

fore a Subcommittee on Foreign Relations US Senate, 2d Congress, [illegible]

1.January [illegible], 2 and February [illegible], Washington, D.C. "US 2 [illegible]

ing Office. Washington, [illegible] D.C.; D.S. Carder, F.W. Cloud. Surface [illegible]

Large Under-ground explosions. "Journ. Geophys. Res.", 64, No [illegible]; M.F.

Romney. Amplitudes of Seismic Body Waves from Underg[illegible] and Nuclear Ex[illegible]

"Journ. Geophys. Res.", 64, No [illegible]

Card 7/7

Seismic observations...

absence of nearby earthquakes, apart from some oscillations recorded in August 1958 which were the probable result of various kinds of ice movement. As has been noted by F. I. Monakov, I. P. Pasechnik and N. V. Shebalin (Ref. 2: Seysmicheskiye i mikroseysmicheskiye nablyudeniya na Sovetskikh stantsiyakh v period MGG (Seismic and Microseismic Observations at Soviet Stations During the IGY) Izd. AN SSSR, 1959), a distinctive characteristic of earthquakes recorded at the Mirnyy station is the rather large period of the body waves; over epicenter distances of 2000 - 3000 km the P wave has a period of 6 - 8 sec and the S wave of 9 - 13 sec. According to the data of V. L. Belotelov, N. V. Kondorskaya and Ye. F. Savarenskiy (Ref. 3: Ob opredelenii energii uprugikh voln, porozhdayemykh zemletryaseniyem, Izv. AN SSSR, ser. geofiz., No. 5, 1960) for Pacific earthquakes recorded at stations in the USSR on the same apparatus, the respective periods for P and S waves are 4 - 5 sec and 6 - 8 sec over epicenter distances of 20 to 80°. These seismic observations confirm the geological views of P. S. Boronov (Ref. 4:

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Seismic observations...

Strukturnaya skhema Antarktiki, Inform. byull. Sov. Antarkt. eksp., No. 1, 1958) concerning the existence of a girdle of Alpine folds around the main East Antarctic Platform, since this zone coincides with the areas of earthquake epicenters shown in Fig. 3. But Boronov's opinion that active uplift is taking place along the littoral zone of the platform is somewhat of an enigma in view of the lack of earthquakes in Eastern Antarctica during the last 3½ years. The comparatively constant directions of the first P-wave movements indicate that tectonic processes along the whole girdle of Alpine fold-structures are mainly taking place in the same direction. During three earthquakes in November 1956, July 1958 and October 1958 one of the steeply-dipping nodal planes for the P wave had a latitudinal trend and the other a meridional trend. It would thus appear that the southern side of the latitudinally-trending fold-structures is rising, although data from a greater number of earthquakes are required to substantiate this assumption. Rayleigh and Love waves recorded in 27 earthquakes were compared with the theoretical curves cited by F. F. Evison, C. E. Ingham

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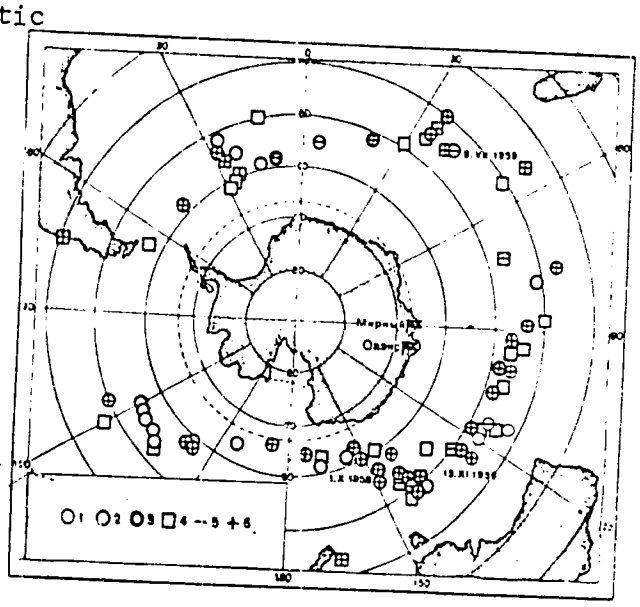
Seismic observations...

Fig. 3. Epicenters of Antarctic earthquakes with an indication of the magnitude of M and the direction of the first movement of the P wave at Mirrnyy and Oazis 1 - $4 < M < 5$, 2 - $5 \leqslant M < 6$, 3 - $M \geqslant 6$, 4 - M not known; the first arrival of the P wave corresponds to a wave of compression (+) and to a wave of rarefaction (-)



Card 4/6

S/049/61/000/002/006/012
D242/D301

Seismic observations...

and R. H. Orr (Ref. 5: Thickness of the Earth's Crust in Antarctic, Nature, 183, No 1, 1959) in order to determine the crustal structure of Antarctica. The theoretical and observational data for waves of a group of 15 earthquakes with foci to the north, west and east of Mirnyy are given graphically. The scattering of the Rayleigh and Love waves implies an oceanic-type crust with a probable thickness of some 7 - 20 km in the area between the earthquake foci and the recording station. The waves of the other group of earthquakes travelled beneath both land and sea areas before reaching Mirnyy. The scattering of Rayleigh and Love waves during their passage beneath land and sea areas is also given graphically and would appear to suggest that the waves passed through an oceanic-type crust with an approximate thickness of 9 km and a continental-type crust with a thickness of around 40 km. Thus, the obtained results indicate that Eastern Antarctica is part of the whole Antarctic continent while the crustal structure of the area between the Antarctide and Alpide folds is typical of oceans. The authors conclude

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9,9865 (1327,1019)

Pyatnitsky, I.V.

Seismic method for detecting and identifying nuclear explosions.

Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya.
no. 6 1961. 853-859

TEXT This paper is an abbreviated version of one read at a meeting of the Council for Seismology of the Academy of Sciences USSR in April 1960. Experimental results obtained for seismic waves due to nuclear and "ordinary" explosions (to be used if one reads) have shown that the elastic seismic waves generated in these explosions are similar to those generated in earthquakes with surface foci. The following types of waves can be recorded in surface and atmospheric nuclear explosions longitudinal and transverse body waves; P, p*, P_n, P_n*, Pi, PP, PKP, S, surface waves mainly of the Rayleigh type Love waves

29579

S/049/61/000/006/005/011
D218/D306

[illegible] method [illegible]

[illegible]ended up to 10,000 km, atmospheric and surface explosions of 20 kilotons up to several hundreds of kilometers and megaton explosions can be detected all over the globe. The position of the epicenter can be determined to within ± 10 km from the times of arrival of P_n and P waves at a number of distant stations surrounding the epicenter. Identification of the explosions is a more difficult problem. It must almost entirely rely on the dynamic properties of the seismic recordings. The author gives a summary of the positions of Soviet and American experts on the question of identifying nuclear explosions. This material has already been published both by US and Soviet Delegations to the Conference on the International Control of Nuclear Explosions. There are 5 figures and 11 references: 7 Soviet-bloc and 4 non-Soviet-bloc. The four references to the English-language publications read as follows: C. F. Richter, Bull. Seism. Soc. Amer., 25, no. 1, 1935; B. Gutenberg, Bull. seism. Soc. Amer., 35, no. 2, 1945; B. Gutenberg, Ann. Geofiz., Rome, 9, no. 1, 1956; C. Romney, J. Geophys. Res., 64, no. 10, 1959.

[illegible]

4334

S/049/62/000/011/001/006
D207/D308

AUTHOR: Pasechnik, I.P.

TITLE: Dependence of the seismic magnitude on the seismogeological structural features in the observation region

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1962, no. 11, 1502-1513

TEXT: Corrections Δm (where m is the seismic magnitude of an earthquake or a similar disturbance) were calculated for 55 Soviet seismic stations using the recordings of eight American nuclear explosions (ground, sealevel, and atmospheric) carried out between February 28, 1954 and July 12, 1958, at Marshall Islands. A correction Δm for a particular station represented the difference between the value of m averaged out for 10 - 25 stations (m_{av}) and the value m_{st} for that station: $\Delta m = m_{st} - m_{av}$. The direct longitudinal P waves (mainly the

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vertical components) were recorded with seismographs of type СК (SK), СКМ (SKM), ВЭГ ИК-М (VEG IK-M). The values of m were calculated from m - log (A/T) + Q, where A is the crustal displacement in microns, T is the period of the seismic waves in seconds, and values of Q were taken from the work of B. Gutenberg and C.F. Richter (Annali di Geofisica, IX, no. 1, 1956). The average corrections were: -0.2 for the Far Eastern stations, - 0.1 for Siberia, - 0.1 for the Soviet Central Asia in its plateau parts, and from - 0.1 to + 0.4 for the regions of the Soviet Central Asia with sedimentary structure; all these corrections are in units of m. The corrections m for various stations in the USSR were essentially the same as the correction ΔM for the same stations determined earlier from the surface waves generated by the Kurilo-Kamchatka earthquakes; here $m = 0.63 M + 2.5$. There are 3 figures and 3 tables.

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

SUBMITTED: May 2, 1962

Card 2/2

L 24481-66 EWT(1)/EWA(h) GW
ACC NR: AP6009423 SOURCE CODE: UR/0020/66/166/006/1338/1341

AUTHOR: Pasechnik, I. P.

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

TITLE: Determination of frequency dependence of the absorption coefficient of longitudinal seismic waves in the earth's mantle

SOURCE: AN SSSR. Doklady, v. 166, no. 6, 1966, 1338-1341

TOPIC TAGS: seismic wave, upper mantle, absorption coefficient, longitudinal wave

ABSTRACT: The amplitude spectra of P_n and P waves as a function of epicentral distances (Δ) were investigated on the basis of seismic data obtained in the Soviet Union and the USA from nuclear tests conducted in Nevada in 1958. In order to use a method developed by Berzon, et al., (1962), the following assumptions were made: 1) the attenuation of P_n and P waves due to absorption is expressed in terms of $e^{-\alpha\Delta}$, where α is the coefficient of absorption, frequency dependent; 2) the soil and structure of the earth's crust at the points of observations having various epicentral distances (Δ) are identical; and 3) the absorption in the lower mantle may be characterized by

UDC: 550.346

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ACC NR: AP6009423

the approximate mean value of the coefficient of absorption (a) independent of depth. The spectra of P_n and P waves were calculated on a computer using the parabolic interpolation method for frequencies from hundredths of a hertg to 20-30 hertg. The data show that 1) the coefficients of absorption, a_{P_n} and a_P, for the upper mantle and lower mantle, are linear functions of frequency, where a_{P_n} and a_P pertain to the P_n and P waves, respectively; 2) the values of absorption coefficients (v) and $Q(\pi/v)$ for the P_n wave determined by various methods show only small differences: 3) the values of the absorption coefficients for the P waves given in this investigation are approximate owing to velocity changes in the mantle as a function of depth; 4) the study of the spectrum of P, PP, PcP, PKP, and other wave types is necessary for the evaluation of the absorption coefficients of definite depth intervals of the mantle; and 5) the more precise evaluation of a_P values for 0.2 to 0.05 cps frequencies requires the study of seismograms obtained from high frequency earth quakes. Presented by Academician D. I. Shcherbakov on 9 June 1964. Orig. art. has: 3 figures.

SUB CODE: 08/ SUBM DATE: 04Jun64/ ORIG REF: 007/ OTH REF: 006

POGAN, K.B.; [illegible]; SPISAREVA, L.L.

Seismic map of Antarctica in memory of M.A. [illegible]. [illegible]
Fiz. zem. no.2:[illegible].

1. Institut fiziki Zemli AN SSSR.

PASECHNIK, I.P.

Science has proved that nuclear explosions can be detected wherever they take place. Priroda 51 no.7:3-12 Jl '62. (MIRA 15:9)
(Atomic weapons—Testing)

PASECHNIK, I.P.

Relationship between the seismic magnitude and the seismotectonic features of the area of observation. Izv. AN SSSR. Ser. geofiz. no.11:1502-1513 N '62. (MIRA 15:11)

1. Institut fiziki Zemli AN SSSR.
(Seismology)

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Preparation of teaser bulls. Veterinariia 41 no.1:79-80 Ja '64. (MIRA 18:2)

1. L'vovskiy zooveterinarnyy institut (for Reshetnyak).
2. L'vovskaya oblastnaya poliklinika (for Pasechnik, Shinkarev).

LOBASOV, M.I., inzh.; PASECHNIK, I.Ye., inzh.

Mechanical OM shale dust spreader. Ugol' Ukr. 3 no.4:37-38 Ap '59. (MIRA 12:7)
(Coal mines and mining--Equipment and supplies)
(Mine dusts)

VOLODIN, V.Ye.; PAKHOMOV, N.M.; DERESHKEVICH, Yu.V.; PASECHNIK, K.A.; BUKHARIN, Ye.V.; MOISEYEVA, Ye.I.. Prinimali uchastiye: GRISHIN, M.Ye., inzh.; PROTOSAVITSKAYA, Ye.A., inzh.; GOFEN, D.A., inzh.; VINARSKIY, V.I., inzh.; PLUTENKO, V.P., inzh.. MOSHCHANSKIY, N.A., nauchnyy red.; TYAPKIN, B.G., red.izd-va; GURVICH, E.A., red.izd-va; MEDVEDEV, L.Ya., tekhn.red.

[Anticorrosive coatings for construction elements and apparatus; handbook] Antikorroziinye pokrytiia stroitel'nykh konstruktsii i apparatury; spravochnoe posobie. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 266 p. (MIRA 13:4)

1. Russia (1917- R.S.F.S.R.). Glavnoye upravleniye po montazhu tekhnologicheskogo oborudovaniya i proizvodstvu montazhnykh rabot. 2. Proyektno-konstruktorskoye byuro tresta Montazhkhimzashchita (for Volodin, Pakhomov, Dereshkevich, Pasechnik, Bukharin, Moiseyeva).
(Protective coatings) (Building materials)

VOLODIN, V.Ye.; DERESHKEVICH, Yu.V.; PAKHOMOV, N.M.; PASECHNIK, K.A.; BUKHARIN, Ye.V.; MOISEYEVA, Ye.I. Prinimali uchastiye: GRISHIN, M.Ye., inzh.; PROTOSAVITSKAYA, Ye.A., inzh.; GOVEDI, D.A., inzh.; VINARSKIY, V.I., inzh.; PLUTENKO, V.P., inzh.. MOSHCHANSKIY, N.A., nauchnyy red.; TYAPKIN, B.G., red.izd-va; GURVICH, E.A., red.izd-va; MEDVEDEV, L.Ya., tekhn.red.

[Anticorrosive coatings for engineering structures and apparatus; a manual] Antikorrozilnye pokrytiia stroitel'nykh konstruktsii i apparatury; spravochnoe posobie. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 266 p. (MIRA 12:8)

1. Russia (1917- R.S.F.S.R.) Ministerstvo stroitel'stva. 2. Proyektno-konstruktorskoye byuro tresta Montazhkhimzashchita (for Volodin, Dereshkevich, Pakhomov, Pasechnik, Bukhatin, Moiseyeva). (Protective coatings) (Factories--Equipment and supplies)

PASECHNIK, I.A. [Pasichnyk, I. .]

Use of radioactive isotopes in the American Red Cross.
Med. prom. no.1:--[illegible].

PASECHNIK, L.D.

LONGINOV, V.V.; PASECHNIK, L.D.

Principal laws of development of the profile of shingle beaches.
Trudy Inst.okean. 7:135-153 '53. (MLRA 7:3)
(Beaches)

PASECHNIK, L.L.

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24.2120 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sirotenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

ABSTRACT: The conference was organised by the Ac.Sc.USSR, the Ministry of Higher Education and Moscow State University.

A.A. Timofeyev - "Measurement of the Gas Density During the Dynamic Operation of a Discharge" (see p 1306 of the journal). A.V. Nedospasov - The Nature of a Striated Positive Column".

V.L. Paral' and Yu.M. Kagan - "The Theory of Probes for Arbitrary Pressures".

Yu.M. Kagan et al. - "The Positive Column of a Discharge in a Diffusion Regime".

M.V. Konyukov - "Influence of the Processes of the Annihilation of the Negative Ions on Their Concentration in the Column".

M.D. Gabovich and L.L. Pasechnik - "Anomalous Scattering, Excitation of Plasma Oscillations and Plasma Resonance"

Ye.L. Klimantovich - "Energy Lost by Charged Particles for the Excitation of the Oscillations in Plasma (the Langmuir paradox)" and "The Theory of Non-linear Plasma Oscillations".

Ye.G. Martinkov and I.G. Nekrashevich - "Dependence of the Temperature in the Near-electrode Region of a Pulse Discharge on the Material of the Electrodes".

N.A. Neretina and B.N. Klyarfel'd - "Formation of Light Spots on the Anode of a Gas Discharge (see p 1301 of the journal).

N.A. Matveyeva - "Distribution of Binary Mixtures of Inert Gases in a d.c. Discharge".

V.G. Stepanov and V.F. Zakharchenko - "Some Phenomena in Rarified Plasma".

V.G. Stepanov and V.S. Bazel' - "The Possibility of Obtaining Highly Concentrated Plasmas".

G.V. Smirnitskaya and E.M. Reykhrudel' - "Some Characteristics of the Discharge in an Ion Pump and in a Magnetic Ionisation Vacuum Gauge".

Ye.T. Kucherenko and O.K. Nazarenko - "Properties of a Discharge with Electron Oscillations in a Magnetic Field" (see p 1253 of the journal).

The paper by L.M. Biberman and B.A. Veklenko considered the approximate methods for determining the concentration of atoms at the radiation levels.

I.I. Sobel'man and L.A. Vaynshteyn read a paper on "A Non-stationary Theory of the Stark Broadening of the Spectral Lines in Plasma".

N.A. Masing and S.L. Mandel'shtam - "The Broadening and the Shift of Spectral Lines in a Gas-discharge Plasma".

R. Lant (England) - "The Kinetics of Electron Collisions Leading to the Excitation of the Molecular Hydrogen in a Hydrogen Discharge".

V.F. Kolesnikov et al. - "Some Properties of the Arc Discharge in an Atmosphere of Inert Gases".

A.A. Mak and M.P. Vanyukov - "Production of High Temperatures By Means of Spark Discharges".

SOV [illegible]

21(7)

AUTHORS: Gabovich, M. D., Pasechnik, L. L.

TITLE: The Anomalous Scattering of Electrons and the Excitation of Plasma Oscillations (Anomal'noye rasseyaniye elektronov i vozbuzhdeniye plazmennykh kolebaniy)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 19[illegible], Vol 36, Nr 4, pp 1044-1055 (USSR)

ABSTRACT: In the introduction, several papers dealing with this subject are discussed (Refs 1-11). The object of the present paper was the investigation of interaction between the electron beam and a plasma formed independently. The experimental arrangement (Fig 1) consisted essentially of a glass tube and an attached piece containing a probe. By means of a liquid mercury cathode and a special anode system a plasma was produced along the tube in the mercury vapor, the density of which amounted to $1.10^9 - 1.5.10^{11}$ cm^{-3} (mercury vapor pressure $p \approx 1.10^{-3}$ torr). An oxide cathode served as electron source. First, the characteristic at various (small) currents I_e of the electron beam was investigated; figure 2 shows the dependence of the collector

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The Anomalous Scattering of Electrons and the Excitation of Plasma Oscillations

current on the grid voltage on the analyzer probe (3 curves for I_e-values of 0.05 - 13 ma with an anode current of 0.5 a, E = 50v, l = 50 mm). Plasma concentration was n = $1.7 \cdot 10^{10}$. The conclusions drawn from the course of the curves and the phenomena of anomalous scattering are discussed (The phenomenon which was first observed by Langmuir (Ref 1), consists in principle in the fact that electrons which have penetrated the plasma partly have high velocities). Figure 3 shows the dependence of the relative quantity of anomalously fast electrons on the position of the probe (again for different I_e values).

The problem of the limiting current is discussed and illustrated by a table for different types of cathodes and different anode currents and plasma densities I_{lim} and j_{lim}. The following chapter discusses excitation and extinguishing of plasma oscillations occurring as a results of interaction between the electron beam and the plasma. Figure 4 shows the spatial curves of oscillation intensities at various I_e-values and a start

Card 2/4 I_a = 10 ma, E = 40v. Figure 5 shows oscillation intensity

The Anomalous Scattering of Electrons and the Excitation of Plasma [illegible]

distribution at various I_a-values and constant I_a [illegible]. Figure 6 shows the dependence of wave length and oscillation intensity on I_a and figure 7 finally shows the radial intensity distribution of oscillations in the electron beam penetrating the plasma for various I_a-values. In the following, the influence exercised by an external magnetic field oriented parallel to the electron beam is discussed in short. Figure 8 shows the dependence of the position of the oscillation zone and of the scattering zone on the wave length of the observed electromagnetic oscillations (l increases linearly with λ); figure 9 shows the dependence of the position of the scattering zone on λ at 2 electron energies, E = 41 and 28 v. l also grows linearly with λ, the curve for greater E is somewhat steeper. Figure 10 shows the same for λ-values corresponding to a certain plasma concentration. A discussion of the results obtained shows that the effects observed may be explained qualitatively by the fact that electrons are assumed to gather in clusters and that these clusters coherently interact with the plasma. The

The Anomalous Scattering of Electrons and the Excitation of Plasma Oscillations

authors finally thank N. D. Morgulis for discussing results.
There are 10 figures, 1 table, and 15 references, 4 of which are Soviet.

ASSOCIATION: Institut fiziki Akademii nauk Ukrainskoy SSR (Physics Institute of the Academy of Sciences, Ukrainskaya SSR)

SUBMITTED: October 10, 1958

Card 4/4

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24.2120

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B006/B070

AUTHORS: Gabovich, M. D., Pasechnik, L. L., Yazeva, V. G.

TITLE: Detection of Ion Oscillations in a Plasma

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 5, pp. 1470-1433

TEXT: Ion oscillations with a limiting frequency of $f_0 = \sqrt{ne^2/\pi M}$ have been known for electron beams with compensated space charge, but they had not yet been found in the plasma of a gas discharge. It is shown in the present work that it is possible to make a direct determination of self sustaining ion oscillations in the plasma of a gas discharge. The experimental apparatus consists of a discharge tube in which there is an arc discharge in mercury vapor; the charge concentration in the plasma can be varied by varying the discharge current. There are two probes in the plasma, one fixed and the other movable. The distance between them could be altered from 0 to 15 mm. The arrangement for the detection of ion oscillations is described in brief. Essentially, it consists of a preamplifier, a super heterodyne amplifier of the type ИП-12М (IP-12M), a special three stage

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Detection of Ion Oscillations in a Plasma

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narrow-band amplifier, and a tube voltmeter. The sensitivity of the amplifying arrangement can reach $\sim 2 \cdot 10^{-8}$ v. The results of measurement are shown in Fig. 2: With increasing discharge current I, the voltage U_{out} at the output of the amplifier system increases, passes through a maximum, and then falls steeply. The position and the height of the signal peaks in the $U_{out}(I)$ diagram depend on the frequency f of the amplifier. Fig. 2 shows the characteristics for f = 1.6, 2, and 2.4 Mc/sec. Fig. 3 shows the dependence of the resonance currents on the potential of the probes for 6 f-values between 1.6 and 2.6 Mc/sec. I_{res} increases linearly with U_{probe}, and the greater f the greater is the slope of this straight line. (I_{res} is the I-value corresponding to the peak of U_{out}). The following relation (2) holds for the frequency of the ion oscillations: $f = f_o/\sqrt{1+ne^2\lambda^2/\pi kT_e}$, where λ is the wavelength. With this, the charge density in the plasma is $n = f^2/(e^2/\pi M - e^2 f^2 \lambda^2/\pi kT_e)$; ($n_{exp} \approx 10^{10}$ cm^{-3}). It may be assumed that the probe selectively indicates oscillations with a wavelength that is

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Detection of Ion Oscillations in a Plasma S/056/60/038/005/010/050
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approximately equal to the radius of the ion layer surrounding the probe Since the radius of the ion layer surrounding the probe increases with increasing potential of the probe, n and I_{res} must increase not only with f but also with negative potential U_{probe} of the probe. This is actually found to be so experimentally. It is also found that $\lambda^2 < kT_e/Mf^2$. As a practical example (corresponding to the experimental conditions), one has $\lambda_{max} = 6.4 \cdot 10^{-2}$ cm with $T_e = 3.8 \cdot 10^4$ °K and $f = 2 \cdot 10^6$ cps. Such a thickness of the ion layer ($\sim \lambda_{max}$) fairly agrees with the experimental results By extrapolating the curves shown in Fig. 3 for a zero potential of the probe, n_o and $I_{o\ res}$ may be obtained; and also here theory and experiment agree satisfactorily (Fig. 4) It has, thus, been possible to detect by these experiments the oscillations of ions and to verify formula (2) qualitatively. V. D. Rutgayzer and K. I. Koncnenko are mentioned. There are 4 figures and 6 references: 1 Soviet, 4 US, and 1 Irish.

SUBMITTED: November 23, 1959

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B104/B204

26.2221

AUTHORS: Gabovich, M. D., Pasechnik, L. L., and Romanyuk, L. I.

TITLE: The boundary of a penetrating plasma and plasma focusing

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 1, 1961, 87-93

TEXT: The authors describe a probing method for determining the boundary of a penetrating plasma. The experimental arrangement shown in Fig. 1 consists of a pulsed ion source with electron oscillations in a magnetic field. The discharge current attains 40 a, the ion pulses have a rectangular shape, the pulse repetition frequency is 50 cps, and the magnetic field strength is about 500 oersteds. The discharges were produced in hydrogen at a pressure of $5 \cdot 10^{-?}$ mm Hg. The plasma coming from the source passes through an opening in an electrode (9), and reaches a lens consisting of two cylinders (10) and (11) (inner diameter of the cylinder: 120 mm; L = 120 mm; distance ΔL: 20 mm). Electrode (11) has a negative potential of U_0 = 50 kv relative to electrode (10). A beam catcher prevents secondary electron emission from electrode (11). Probes (7) and (8) could be shifted. The signal coming from the probes was amplified

and fed into a peak generator. The output signal of this peak generator was conveyed to a recorder, whereby the spatial distribution of the probe current could be recorded. From the axial and radial distributionsof the plasma parameters near the opening, which are shown in Figs. 4 and 5, it follows that an increase of the negative potential of electrode (11) up to U_o = 30 kv produces no effect upon the distribution of the plasma parameters. At a greater distance from the opening, determination of the plasma parameters is more difficult. The authors confined themselves to determining the plasma boundary and, for this purpose, they applied a potential of 100 v to the probe relative to electrodes (5) and (9); the probe current was automatically recorded. In this way, a plasma boundary could be clearly determined. This boundary is at a distance of about 10-15 mm from the opening and manifests itself in a change in the drop of the probe current. Up to approximately 10 mm, the probe current drops exponentially; at larger distances a greater drop occurs (Fig. 6). In this way, it is possible to determine the plasma boundaries for various conditions. As may be seen from a close study of the plasma boundaries, the shape and position of the plasma boundary change with a change in U_o, which is equal to a change in the focusing properties of the system.

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If the plasma boundaries are simulated with metal electrodes of corresponding configuration, it is possible, conditions being suitable, to construct the ion trajectories (Fig. 9). From this figure it may be seen that by increasing the potential and extending the plasma boundary, the ion current focused in the beam catcher may be increased. Fig. 10 graphically represents the experimental dependence of the ion current on the potential U_o. There are 12 figures, 1 table, and 7 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Institut fiziki AN USSR Kiyev
(Institute of Physics AS UkrSSR, Kiyev)

SUBMITTED: June 1, 1960

27166
S/057/61/031/009/006/019
B104/B102

26.2311

AUTHORS: Gabovich, M. D., Pasechnik, L. L. and Lozovaya, Ye. A.

TITLE: Discharge of a plasma with high concentration of charged particles into a vacuum

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 9, 1961, 1049-1056

TEXT: The authors studied, by a probing method, the spatial distribution of the parameters of a hydrogen plasma with high concentration of charged particles (about 10^{15} cm^{-3}). The plasma was produced by a pulsed discharge, the amplitude of the discharge current being about 50 ka. The oscillation period was about 25 μsec, the battery of condensers had 90 μf capacity, and was charged to 3 kv. The most important parts of the experimental arrangement were the plasma source (discharge space with 3 electrodes) and the empty space beyond the hole in the lowest electrode (cf. Fig. 1), where one or two probes could be shifted. All measurements were made at a hydrogen pressure of $5.6 \cdot 10^{-2}$ mm Hg in the source, and about 10^{-5} mm Hg outside the source. In all cases the oscillograms of

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Discharge of a plasma with high

the probe current were recorded together with those of the discharge current. Some peculiarities turned up in the transition from ionic to electronic current; in particular, a strong modulation of the electronic current took place. Such a modulation was observed when the probe exhibited a small positive potential with respect to electrode 2 (Fig. 1). Further, it was remarkable that the ionic current peak agreed almost exactly in time with the discharge current peak, while the electronic current peak was considerably shifted against the discharge current. This is explained by the fact that the probe current depends not only on the plasma concentration but also on the potential in the probe space at the given instant. After determining the probe characteristics, the authors determined the distributions of concentrations of charged particles, of electron gas temperature, and of the space potential. Fig. 9 shows examples of radial distribution of the probe current for distances of the probe from electrode 2 of 5, 10, and 20 mm. Results reveal that the axial distribution of parameters is the same as in plasma with low concentration of charged particles. The temperature gradient is here lower than in plasma with low concentration of charged particles. In the

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Discharge of a plasma with high

anode cavity, the temperature of the electron gas (about 50,000°K) is lower than in the cathode cavity (130,000-70,000°K) There are 9 figures and 8 references: 6 Soviet and 1 non-Soviet The reference to the English-language publication reads as follows: The Characteristics of electrical discharges in magnetic fields. Edited by A Guthrie and R. K. Walkering, N. Y., 1949

ASSOCIATION: Institut fiziki AN USSR Kiyev (Physics Institute, AS UkrSSR, Kiyev)

SUBMITTED: August 1, 1960

Fig. 1. Diagram of the experimental arrangement. Legend. 1,2, and 3 are electrodes; 4 is the outlet of the plasma source (3 mm diameter); 5 is the discharger; 7 and 8 are the probes; C_o is the capacity for maintaining the probe potential; (A) is an amplifier, (B) an oscilloscope.

Fig 9. Spatial distribution of the plasma parameters Legend. (a)

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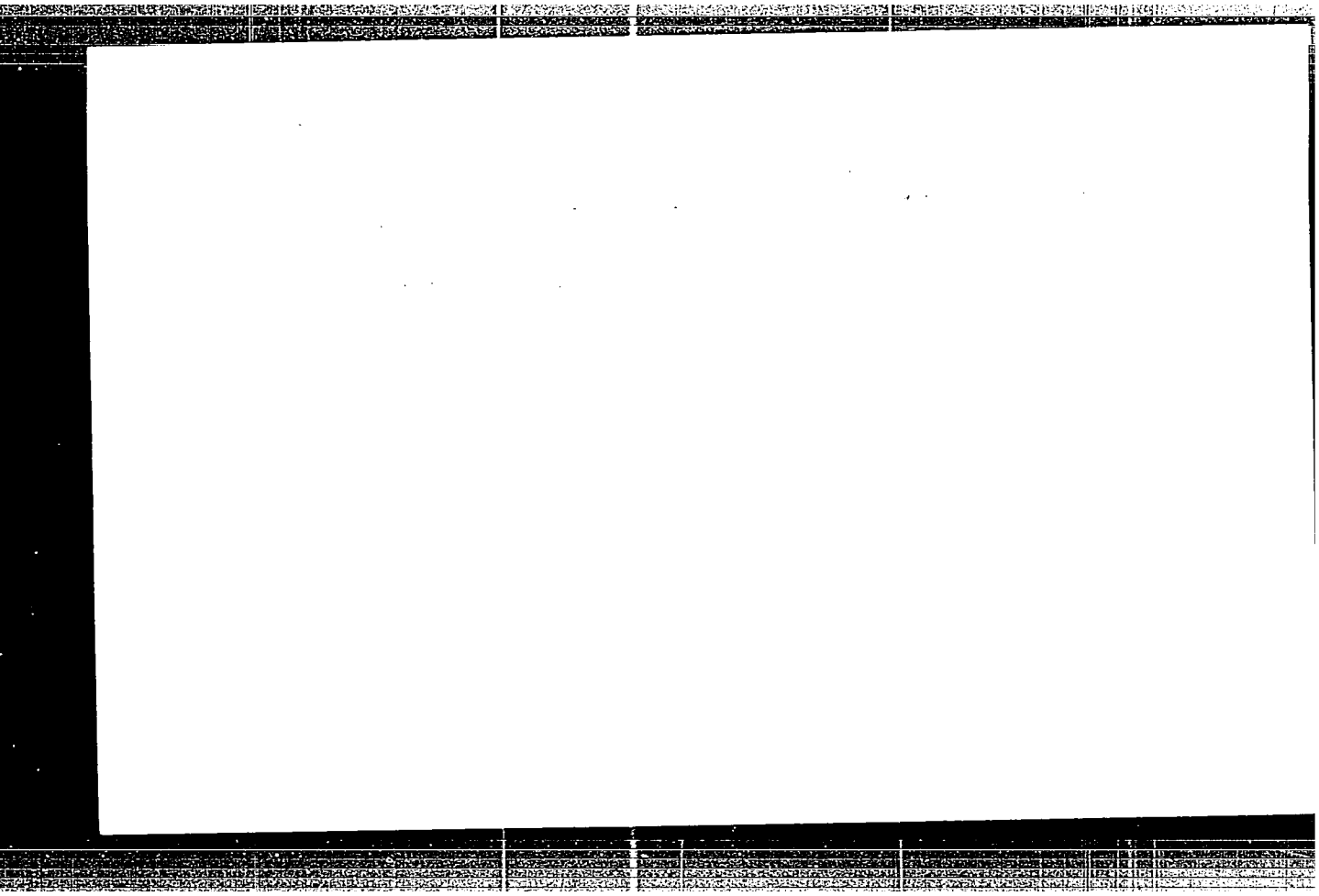
PASECHNIK, L.L. [Pasichnyk, L.L.]; KOZAK, O.V.

Study of the escape of charged particles from a plasma in a magnetic field. Ukr.fiz.zhur. 7 no.11:1165-1171 N '62. (MIRA 15:12)

1. Institut fiziki AN UkrSSR, Kiyev.
(Plasma (Ionized gases)) (Magnetic fields)



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ACCESSION NR: AP4035699 S/0057/64/034/005/0873/0878

AUTHOR: Pasechnik, L.L.; Kozak, O.V.; Yagola, V.V.

TITLE: Magnetic confinement of a dense current-carrying plasma

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 873-878

TOPIC TAGS: plasma, plasma filament, dense plasma, plasma confinement, magnetic plasma confinement, plasma diffusion, ambipolar diffusion, helium plasma

ABSTRACT: Dense (10^{12} to 10^{14} cm^{-3}) plasma filaments were formed in helium at pressures from 0.1 to 0.01 mm Hg. The plasma filament carried a current with current density up to 10^3 A/cm^2 and was located in a longitudinal magnetic field of 7 kOe or less. The gas pressure and longitudinal magnetic field strength were varied, and the radial density distribution in the plasma filament was measured. The density distributions were compared with calculations based on ambipolar diffusion theory. The diffusion theory accounted adequately for the observations in magnetic fields less than 3 kOe. The plasma filaments were formed in a tube 8 cm in diameter and 80 cm long and containing a hot tungsten cathode at one end and a cold anode at the other. At the beginning of the operating cycle, the cathode was overheated for a second or two

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and a capacitor was discharged through the tube, thus producing a preliminary ionization of the gas. A 5-millisec pulse was then applied to the magnet winding, producing the longitudinal magnetic field. After a delay of 1 to 1.5 millisec, giving the magnetic field time to reach a nearly constant value, a 3-millisec rectangular pulse was applied to the discharge tube, producing the plasma filament. The density of the plasma was determined with a Langmuir probe. There is some discussion of the applicability of Bohm's formula to the present conditions, in which the ion Larmor radius is less than the radius of the probe, but it is concluded that relative densities in different parts of the plasma should be given with adequate accuracy. The electron temperature was determined from the intensity ratio of He II 4686 Å to He I 4713 Å lines; it was found to be 5 eV. The highest plasma density observed was 5×10^{14} cm^{-3}, and the ionization is said to have reached 100%. The plasma density decreased rapidly with increasing distance from the axis of the tube; the rate of decrease was greater for stronger magnetic fields. In a 4.4 kOe field the density fell to half its axial value at 8 mm from the axis, and to one-tenth its axial value at 23 mm. The steady-state relation between density and radius was calculated from the theory of ambipolar diffusion, with recombination taken into account. Bessel's equation of zero order is derived for the square of the density (this equation was also obtained by N.Rynn and N.D'Angello (Rev.Sci.Instr.31,1326,1960)), and the

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21.2100

AUTHORS: Pasechnik, M. B., Pucherov, N. N., Totskiy, I. A., Chirko, V [illegible]

TITLE: Scattering of medium-energy nucleons, and the optical model of the nucleus

PERIODICAL: Referativnyy zhurnal, Fizika, no. 12, 1961, 111, abstract 12B58 ("Tr. Tashkentsk. konferentsii po mirn. ispol'zovaniyu atomn. energii", 1959, v. 1, Tashkent, AN UzSSR, 1961, 103-107)

TEXT: There were investigated the angular distributions of 6.8-Mev protons and 2.8-Mev neutrons elastically scattered by nuclei of Bi, Pb, Sn, Cd, Ag, Zr, Cu, Ni, Co, Fe and Al and nuclei of Bi, Pb, Hg, Sb, Sn, Cd, Zn, Cu and Fe respectively. For medium-weight nuclei the angular distributions of elastically scattered protons represented in the form $\sigma(\theta)/\sigma_R(\theta)$ reveal a diffraction structure which becomes disturbed on going to the lighter nuclei. The experimental angular distributions of elastic scattering were compared with calculations carried out according to the optical model of the nucleus. The distributions of neutrons scattered by Fe, Sn and Bi are not only in qualitative but also in quantitative agreement with calculations based on the blurred-edge

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PASECHNIK, M.S., doktor tekhn. nauk; ZHEL'VIS, A.I., kand. tekhn. nauk; KORBUT, V.A.; PLATONOVA, N.N.; SHEVARINA, T.S.; TSINTSIUS, V.M.; STRELE, L.A., red.

[Manual on general chemistry and physicochemical methods of analysis] Uchebnoe posobie po obshchei khimii i fiziko-khimicheskim metodam analiza. [by] M.S.Pasechnik i dr. Pod obshchei red. M.S.Pasechnika i A.I.Zhel'vis (chast' 1). Leningrad, 1965. 204 p. (MIRA 19:1)

1. Leningrad. Lesotekhnicheskaya akademiya.

PASHCHNIK, M. S., Dr. Tech. Sci. (diss) "Investigation of Effect of Nature and Physical-Mechanical Properties of Lubricants on Process of Plastic Deformation of Rolled Metal and Development of High-efficient Technological Lubricants for Cold Rolling of Thin-sheet Steel," Moscow, 1961, 26 pp (Moscow Petrol. Engr. and Gas Industry Institut.) 270 copies (KL Supp 12-61, 261).

PASECHNIK, M.S. [Pasichnyk, M.S.]; KAMINSKIY, N.A.[Kamins'kyi, N.A.]

Investigating the effect of the composition of a commercial lubricant on the coefficient of expansion in cold rolling of thin steel plates. Dop. AN URSR no.1:49-51 '59. (MIRA 12:3)

1. Dnepropetrovskiy gosudarstvennyy universitet. Predstavil akademik AN USSR A.P. Chekmarev.
(Rolling (Metalwork)) (Lubrication and lubricants)