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117

KALYAYEV, A.V. (Taganrog); DVORYANTSEV, Yu.A. (Taganrog); MELIKHOV, A.N.
(Taganrog)

Use of graph theory methods in the synthesis of potential networks.
Izv. AN SSSR. Tekh. kib. no.4:65-69 J1-Ag '65. (MIRA 18:11)

DVORYANTSEVA, G.G.; SHEYNER, Yu.N.

Determination of the number of hydroxyl and carbonyl groups in steroid molecules based on the intensity of bands in the infrared spectra. Zhur.anal.khim. 17 no.7:883-889 0 '62.

(MIRA 15:12)

1. Institute of Chemistry of Natural Compounds, Academy of Sciences, U.S.S.R, Moscow.

(Steroids) (Hydroxyl group—Spectra) (Carbonyl group—Spectra)

ACCESSION NR: AP3000129

8/0062/63/000/005/0924/0927

AUTHOR: Dvoryantseva, G. G.; Sheynker, Yu. N.

TITLE: The integral intensities of infrared bands of characteristic oscillations of the functional ferrocene derivative groups

SOURCE: AN SSSR. *Izvestiya. Otdeleniye khimicheskikh nauk*, no. 5, 1963, 924-927

TOPIC TAGS: monosubstituted groups of ferrocene, disubstituted groups of ferrocene, carbonyl group integral intensities

ABSTRACT: The measurement of frequencies and the integral intensities of the infrared absorption bands of mono and divalent oscillations of various types of carbonyl groups such as aliphatic, aromatic, and ferrocene ketones, complex ethers, amides, and nitrile groups of ferrocene derivatives in various solvents (heptane, dioxane, carbon tetrachloride) have been obtained. The obtained results were compared with the known frequencies and intensities of similar aliphatic and aromatic compounds. The frequencies of the infrared valence oscillation bands of the electron-accepting functional groups of the monosubstituted derivatives of ferrocene are lowered. However, the integral intensities are higher in comparison with benzene derivatives. The integral intensities of the carbonyl bands of the disub-

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ACCESSION NR: AP3000129

stituted derivatives of ferrocene are lowered as a result of reciprocal transference effect of the substitutions via the ferrocene nucleus. "The authors express their gratitude to E. G. Perevalova, N. S. Kochetkova, and S. P. Gubin for their kind help in the production of compounds." Orig. art. has: 2 tables.

ASSOCIATION: Institut khimii prirodnykh soyedineniy Akademii nauk SSSR (Institute of the Chemistry of Natural Chemical Compounds, Academy of Sciences SSSR)

SUBMITTED: 11Oct62

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: CH

NO REF SOV: 006

OTHER: 008

Card 2/2

DVORYANTSEVA, G.G.; STRUCHKOVA, M.I.; SHEYNKER, Yu.N.

Integral intensities of infrared absorption bands of certain characteristic vibrations of cyclopentadienyl rings in ferrocene derivatives. Dokl. AN SSSR 152 no.3:617-620 S '63. (MIRA 16:12)

1. Institut khimii prirodnykh soyedineniy AN SSSR. Predstavleno akademikom A.N.Nesmeyanovym.

SUVOROV, N.N.; SOKOLOVA, L.V.; RYZHIKOVA, V.M.; DVORYANTSEVA, G.G.

Microbiological 20 α -reduction of keto steroids with the aid of
Bacillus megatherium. Dokl. AN SSSR 152 no.5:1130-1131 0 '63.
(MIRA 16:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut im. S.Ordzhonikidze i Institut khimii prirodnykh
soyedineniy AN SSSR. Predstavleno akademikom M.M.Shemyakinym.

ANISIMOV, K.N.; KOLOBOVA, N.Ye.; MAGOMEDOV, G.K.; DVORYANTSEVA, G.G.

Ethers of 2-hydroxyhexen-5-yn-3-yl-2-cyclopentadienylmanganese
tricarbonyl. Izv. AN SSSR Ser. khim no.7:1320-1322 J1 '64.
(MIRA 17:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 10666-65 EWT(m)/EPF(c)/ENP(j) Pc-4/Pr-4 ASD(m)-3/AS(mp)-2/ASD(a)-5/
RFL RM

ACCESSION NR: AF4041155

S/0020/64/156/004/0873/0876

AUTHOR: Dvorvantsseva, G. G.; Sheynker, Yu. N.; Yur'yeva, L. P.; Nesmeyanov, B
A. N. (Academician)

TITLE: Establishing the structure of several isomeric disubstituted ferrocenes
by their IR absorption spectra. 7

SOURCE: AN SSSR. Doklady*, v. 156, no. 4, 1964, 873-876

TOPIC TAGS: ferrocene, disubstituted ferrocene, structure, IR spectra, alkylferro-
cenylamide, alkylferrocenylnitrile, phenylferrocenylamide, phenylferrocenylnitrile,
NH sub 2 absorption, region, isomer, spatial hindrance, spectral
integral intensity

ABSTRACT: The IR absorption spectra of several alkyl- and phenylferrocenylamides
and alkylferroceny nitriles were examined to determine the structure of the
isomers. There are differences in the absorption in the 910-920 cm^{-1} region in
mono- or heterocyclic disubstituted ferrocenes and in pairs of homocyclic disub-
stituted isomers, but because of difficulties in identifications in this region,
an intensive examination was made of the frequency and intensity characteristic of
the C=O and NH_2 groups. In the 1,2-isomers there are differences in the 1600-1700

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L 10666-65

ACCESSION NR: AP4041155

(C=O) and 3100-3500 cm^{-1} (NH_2) regions: the band for the deformed vibrations of the NH_2 group splits simultaneously with a decrease in the splitting of the bands in the region of the NH valency vibrations; the spectra contain absorption bands for both free and bonded NH-groups. In the 1,3-isomers of methylferrocenylamide and phenylferrocenylamide there is not splitting of the -NH_2 band (in the corresponding ethyl derivative the slight splitting is explained by the effect of the ethyl radical on the amide group). The spectra of the 1,3-isomers in CCl_4 are somewhat similar to spectra of solutions of the corresponding 1,1'-derivatives; they have no bands characterizing bonded NH-groups. The isomers differ in the integral intensity of the carboxylic amide group. The ethyl group in the 1,1'- and 1,3-isomers increases the integral intensity in comparison to that of the unsubstituted ferrocenylamide. In the 1,2-isomers, methyl and ethyl substituents do not cause this increase, apparently due to loss of conjugation of the amide group with the cyclopentadienyl ring because of spatial hindrance. These conclusions about the structure of these compounds based on IR spectra are in agreement with oxidation-reduction potentials, UV spectra and comparative adsorptions on Al_2O_3 . Further studies are being conducted. Orig. art. has: 2 tables and 2 figures.

ASSOCIATION: Institut khimii prirodnykh soyedineniy Akademii nauk SSSR

Card 2/3

L 10666-65

ACCESSION NR: AP4041155

(Institute of the Chemistry of Natural Compounds, Academy of Sciences SSSR);
Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of
Organometallic Compounds Academy of Sciences SSR)

SUBMITTED: 14Feb64

ENCL: 00

SUB CODE: OC, OP

NO REF SOV: 004

OTHER: 003

Card 3/3

ACCESSION NR: AP4041402

S/0020/64/156/006/1375/1378

AUTHOR: Braynina, E. M.; Dvoryantseva, G. G.; Freydina, R. Kh. (Corresponding member AN SSSR)

TITLE: Cyclopentadienyl dizirconoxirane compounds containing aryl or chelate-forming groups

SOURCE: AN SSSR. Doklady*, v. 156, no. 6, 1964, 1375-1378

TOPIC TAGS: cyclopentadienyldizirconoxirane derivative, arylcyclopentadienyldizirconoxirane compound, synthesis, diphenyltetracyclopentadienyldizirconoxirane, di p tolyltetracyclopentadienyldizirconoxirane, tetracyclopentadienyldizirconoxirane dichloride, dicyclopentadienyldizirconoxirane tetraacetylacetonate, tetracyclopentadienyldizirconoxirane, structure, IR spectra

ABSTRACT: New cyclopentadienyldizirconoxirane compounds containing phenyl, p-tolyl and acetylacetonate groups were synthesized.

Dicyclopentadienyldizirconium dichloride was reacted with phenyllithium to produce diphenyltetracyclopentadienyldizirconoxirane (I): $(C_5H_5)_2ZrCl_2 + C_6H_5Li \xrightarrow{Me} (C_6H_5)(C_5H_5)_2ZrOZr(C_5H_5)_2(C_6H_5)_2H_2O$.

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ACCESSION NR: AP4041402

Di-p-tolyltetracyclopentadienyldizirconoxirane was prepared similarly from p-tollyllithium. I reacted with Cl_2 to form tetracyclopentadienyldizirconoxirane dichloride (II). II reacted with phenyllithium to form I. The diacetylacetonate of cyclopentadienylylirconium chloride was hydrolyzed to the tetraacetylacetonate of dicyclopentadienyldizirconoxirane: $(\text{C}_5\text{H}_5)(\text{C}_5\text{H}_7\text{O}_2)_2\text{ZrCl} + \text{H}_2\text{O} \rightarrow (\text{C}_5\text{H}_5)(\text{C}_5\text{H}_7\text{O}_2)_2\text{ZrOZr}(\text{C}_5\text{H}_5)(\text{C}_5\text{H}_7\text{O}_2)_2$. Dicyclopentadienylylirconium dibromide was hydrolyzed to the dibromide of tetracyclopentadienyldizirconoxirane. The structures of these compounds were proven by chemical and IR spectral analysis. Characterizing frequencies of the IR spectra are tabulated. Orig. art. has: 1 table and 4 equations.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organometallic Compounds, Academy of Sciences, SSSR) Institut khimii prirodnykh soyedineniy Akademii nauk, SSSR (Institute of the Chemistry of Natural Compounds, Academy of Sciences SSSR)

Card 2/3

NESMEYANOV, A.N., akademik; DVORYANTSEVA, G.G.; KOCHETKOVA, N.S.;
MATERIKOVA, R.B.; SHEYNKER, Yu.N.

Properties and structure of dicyclopentadienylmercury. Dokl.
AN SSSR 159 no.4:847-850 D '64 (MIRA 18:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

MIKHLINA, Ye.Ye.; VOROB'YEVA, V.Ya.; RUBTSOV, M.V.; DVORYANTSEVA, G.G.

Some properties of tricyclic β -diketone, 2,3-(1',3'-diketo-4',5'-cyclohexyl)-quinuclidine. Zhur. ob. khim. 35 no.1:110-114. Ja '65.
(MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze i Institut prirodnykh soyedineniy AN SSSR.

L 46186-65 EWT(l)/EWT(m)/EPF(c)/EWP(j)/EEO(t) Pe-4/Pr-4/Pi-4 IJP(c)
W4/GG/EM S/0020/65/160/005/1075/1078 52

ACCESSION NR. AP5007562
AUTHOR: Dvoryantseva, G. G.; Portnova, S. L.; Grandberg, K. I.; Gubin, S. P.; Sheynker, Yu. N.; Nesmeyanov, A. N. 50
B

TITLE: Nuclear magnetic resonance spectra of ferrocene derivatives 21

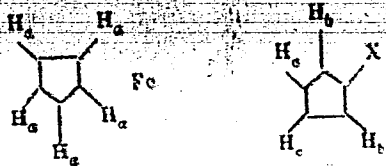
SOURCE: AN SSSR. Doklady, v. 160, no. 5, 1965, 1075-1078

TOPIC TAGS: nuclear magnetic resonance, ferrocene, proton resonance, Hammett constant, cyclic compound, cyclopentadienyl meta.

ABSTRACT: The authors measured the chemical shifts of proton signals in high-resolution nuclear magnetic resonance spectra of mono- and heteroannular disubstituted ferrocenes, using 10-15% solutions in CCl₄ and an INM-C-60 nuclear magnetic resonance spectrometer. In the proton resonance spectra of all monosubstituted ferrocenes, a singlet is produced by the five equivalent protons of the unsubstituted five-membered ring, and two triplets are produced by the (b) and (c) substituted ring with a spin-spin interaction constant J_{bc} 1.5 cps.

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ACCESSION NR. AF000706



It was found that the chemical shifts of protons of the unsubstituted ring are chiefly determined by the induction effect of the substituents. The observed values of the shifts δ_a and δ_b indicate a considerable effect of the conjugation of the substituent on the chemical shifts of protons of the substituted ring. Correlations are presented between the values of δ_a - δ_b and the conjugation constants of the substituents, between the chemical shifts and the induction constants of the substituents, and between the chemical shifts of protons of the substituted rings and the Hammett constants σ of the substituents. The results of the study make it possible to draw a close analogy between the magnitude and character of the influence of the substituents on the (a), (b), and (c) hydrogen atoms of the ferrocene nucleus, and correspondingly on the meta, ortho, and para hydrogen atoms of the phenyl nucleus. Orig. art. has: 3 figures, 2 tables, and 5 formulas.

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L 46186-65

ACCESSION NR: AP5007562

ASSOCIATION: Institut khimii prirodnykh soedineniy Akademii nauk SSSR (Institute of Chemistry of Natural Compounds, Academy of Sciences SSSR); Institut elemento-organicheskikh soedineniy Akademii nauk SSSR (Institute of Organometallic Compounds, Academy of Sciences SSSR)

SUBMITTED: 20Jul64

ENCL: 00

SUB CODE: NP, OC

NO REF SOV: 007

OTHER: 004

Card 3/3

DVORYANTSEVA, G.G.; SHEYNKER, Yu.N.; NESMEYANOV, A.N., akademik; NOGINA, O.V.;
LAZAREVA, N.A.; DUBOVITSKIY, V.A.

Infrared spectra of some cyclopentadienyl compounds of titanium.
Dokl. AN SSSR 161 no.3:603-606 Mr '65.

(MIRA 18:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i Institut
khimii prirodnykh soyedineniy AN SSSR.

KURSANOV, D.N.; SETKINA, V.N.; BARANETSKAYA, N.K.; DVORYANTSEVA, G.G.;
MATERIKOVA, R.B.

Isotopic exchange of hydrogen atoms in cyclopentadienyl rings
of cobalticinium compounds. Dokl. AN SSSR 161 no.4:847-850 Ap
'65, (MIRA 18:5)

1..Chlen-korrespondent AN SSSR (for Kursanov).

L 04262-67 EWT(1)/EWT(m)/EWP(j)/T/EWP(k)/EWP(1) IJP(c) WG/RIW/RM

ACC NR: AP6030020

SOURCE CODE: UR/0020/66/169/005, 1083/1086

AUTHOR: Dyoryantseva, G. G.; Yur'yeva, L. P.; Portnova, S. L.; Sheynker, Yu. N.; 42
Nesmeyanov, A. N. (Academician) BORG: Institute of Chemistry of Natural Compounds, Academy of Sciences SSSR (Institut khimii prirodnykh soedineniy Akademii nauk SSSR); Institute of Hetero-Organic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soedineniy Akademii nauk SSSR)TITLE: Proton magnetic resonance spectra of disubstituted ferrocenes 7

SOURCE: AN SSSR. Doklady, v. 169, no. 5, 1966, 1083-1086

TOPIC TAGS: proton resonance, ferrocene, analytic chemistry, spectrum analysis

ABSTRACT: The proton magnetic resonance spectra of 25 heteroannular disubstituted ferrocenes with various substituents in both rings were taken and the rule of additivity of chemical shifts of the ring protons was established. The structure of several homoannular isometric amides of methyl- and ethylphenyl-ferrocene carboxylic acids and nitriles of ethyl- and phenyl ferrocene carboxylic acids was defined on the basis of the PMR spectra. The PMR spectra were measured using 10% solutions in CCl₄ and CDCl₃ and a JNMC-60 spectrometer with an operating frequency of 60 megacycles. In all cases excellent agreement was observed between the experimentally determined chemical shifts

UDC: 538.113+547.13+546.72

Card 1/2

L 04262-67

ACC NR: AP6030020

for the ring protons and the chemical shifts calculated using the additivity rule.
Orig. art. has: 2 tables.

SUB CODE: 07/

SUBM DATE: 12Feb66/

ORIG REF: 004/

OTH REF: 003

Card 2/2

Ev

DVORYETSKAYA, YE. I.

30/20

O nyekitorykh osotyennostyakh uflyevodnogo i azotnogo ob'yena list'yev osokorya (Populus nigra) v razlichnykh usloviyakh proizrastaniya. Trudy In-ta fiziologii rastypeny im. Timiryazeva, t. VI, vyp. 2, 1949, s. 118-24. Bibliofr: 7 Nazv.

SO: LETCPIS' No. 34

Pusanov, F. N. Plodonosheniye ekzotichyeskikh dryevyesno-kustarinkovykh porod v sryednyey Azii. Sm. 30243

21742

27.0000 4112

S/025/61/000/006/004/007
D244/D305

AUTHORS: Dvoržák, I. (Prague), and Isakov, P. (Moscow) Candidates of Medical Sciences

TITLE: At speeds close to the velocity of light

PERIODICAL: Nauka i zhizn', no. 6, 1961, 13-15

TEXT: It has been long known that movement at a constant speed does not induce any marked changes in the human organism; man is not conscious of the high velocity of rotation of the earth on its axis or of its movement around the sun. But any acceleration or deceleration, however slight, is immediately felt by the human body. This problem of the effect of large changes in speed on man is of considerable importance, since future spaceships may well be launched with velocities in excess of that necessary for entering into orbit around the earth. According to the theory of relativity time elapses more slowly in a moving rocket than on earth. There are two viewpoints on the magnitude of the difference in time between launching and landing of a rocket;

X

Card 1/5

21742

S/025/61/000/006/004/007
D244/D305

X

At speeds close to the velocity of light

some scientists affirm that the time difference on earth and in the rocket will increase with the length of the flight, while others maintain that this difference will disappear as the rocket is braked on its approach to the earth. But it is of little importance biologically as to which theory is correct; any age changes experienced by the astronauts during flight will not disappear during the approach to earth, and it will, therefore, be possible to measure them after the rocket has landed. At the Astronautical Congress of 1956 [Abstracter's note: No other details given.] Professor Zenger suggested that biological phenomena will take place more slowly in photon-rocket flights than on earth. If the time of space travel to the stars and planets of extragalactic nebulae can thus be "shortened", a flight to the nearest star in the constellation of Centaurus would take less than 3 months; the astronauts would have become 4 years younger than their original coevals on their return to earth. Similarly a journey around the Einstein universe would be completed in 42

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21742

S/025/61/000/006/004/007
D244/D305

At speeds close to the velocity of light

years, whereas millions of years would have passed on the earth during the course of such a flight. These flights will raise three serious problems. One is technical - the matter of relocating the earth after a journey around the cosmos; the solar system will have by then changed its position in the galaxy. There is also the social aspect, since the astronauts will find on their return to earth people with ideas and interests very different from those of the inhabitants at the time of their departure. The third problem is biological - the manner in which processes will take place in the human organs during flight. Events in each cell are intimately related to a number of physico-chemical reactions which often result in the reformation of original substances - the so-called cyclic conversions of a definite rhythmic nature. Together with such changes in a complete organism there also takes place the counting-off of the time of its existence. The rate of changes in an organism is not the sum of the changes in all the separate cells; the mechanisms

Card 3/5

21742
S/025/61/000/006/004/007
D244/D505

X

At speeds close to the velocity of light

of a complete organism are of a higher order than those of its individual cells. The passage of time differs in relation to the age of the organism; the exchange of matter, the rate of healing of injuries and reactions to different conditions of the surrounding environment vary with the age of the organism. The physiological functions of an organism are extremely diverse and depend on very different irritants. Their recording and subsequent transmission back to earth would hardly permit the lags related to another course of time in the rocket to be established. This is the reason for using the simplest micro-organisms - whose rate of cell-division in a nutritious environment is quite stable - in cosmic experiments. By placing them in an artificially-created stable medium inside a rocket, it may in the future be possible to evaluate the effect of changes during the passage of time. If the rate of cell-division in the rocket during a period of time reckoned in terrestrial hours appears to be very different, sufficiently positive data will have been obtained in favor of the

Card 4/5

YASHIN, A.S.

EXCITATION OF SHORT-PERIODICAL OSCILLATIONS OF THE EARTH'S
MAGNETIC FIELD DURING SUDDEN COMMENCEMENT OF MAGNETIC STORMS.
(The full text is in press in Publ. Crimean Obs. 1958)

by A.S. YASHIN

Report presented at the CSAGI meeting, 1-9 August 1958, Moscow.

DVORYASHIN A.

MUSTEL', E.R.; DVORYASHIN, A.S.

Solar activity and geomagnetic disturbance from 1942-1944 [with
summary in English]. Astron. zhur. 35 no.1:3-17 Ja-F '58.

1. Krymskaya astrofizicheskaya observatoriya AN SSSR. (MIRA 11:3)
(Sun--Flocculi) (Magnetic storms)

89782

S/169/61/000/002/037/039

AO05/A001

9.9842 (also 1041, 1046)

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 2, p. 51, # 2G354

AUTHOR: Dvoryashin, A. S.

TITLE: The Origination of Short-Periodic Fluctuations of the Earth's
Magnetic Field During a Sudden Commencement of Magnetic Storms

PERIODICAL: V' sb.: "Magnitno-ionosfernyye vozmushcheniya", No. 1, Moscow,
AN SSSR, 1959, pp. 58-63

TEXT: Investigations of the fine-structure of sudden commencements of
magnetic storms allowed the Krymskaya astrofizicheskaya observatoriya (Crimean
Astrophysical Observatory) to detect shortperiodic fluctuations with a period of
12-15 sec and amplitudes of up to 0.2 γ . These short-periodic fluctuations are
explained as magnetic-hydrodynamic waves arising during the incidence of a shock
wave causing a sudden commencement onto the ionized medium surrounding the Earth.

V. A.

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

Card 1/1

87359

3,9100 (1121 ONLY)
3,1800 (1041, 1062, 1168)

S/035/60/000/012/017/019
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 12, p. 59, # 12325

AUTHOR: Dvoryashin, A. S.

TITLE: On Short-Periodic Pulsations of the Earth's Magnetic Field

PERIODICAL: Izv. Krymsk. astrofiz. observ., 1959, Vol. 21, pp. 198-208 (English summary)

TEXT: A sharp variation of the Earth's magnetic field at the sudden commencement is usually interpreted as a result of passing a shockwave from the Sun. However the free path length at high velocity is very great. A sharp front can be obtained only when the magnetic field is taken into account. The impact of the wave against the Earth's field must give rise to fluctuations. A special device was devised for recording short-periodic pulsations of the magnetic field during the period of disturbances. Pulsations with a period of ~ 15 sec were discovered, which arise during sudden commencements. The velocity of a wave of such a period in the upper ionosphere and above is determined by the ion density. On the basis

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87359

S/035/60/000/012/017/019
A001/A001

On Short-Periodic Pulsations of the Earth's Magnetic Field

of density data, the length of the wave is calculated as being 30,000 km. A standing wave seems to be originated between magnetic-conjugated points of the Earth's northern and southern hemispheres. Reflection occurs from the boundary of the ionosphere. A part of the energy dissipates downwards, producing the short-periodic pulsations observed. The damping of the waves during their propagation through the ionosphere is considered. There are 48 references.

From author's summary

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

Card 2/2

89803

S/169/61/000/003/021/022
A005/A005

9.9842 (2603, 1041, 1046)

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 3, p. 44, # 3G352

AUTHORS: ~~Dvorzhashin, A. S., Pikel'ner, S. B.~~

TITLE: On the Fine Structure of the Sudden Beginning of a Magnetic Storm

PERIODICAL: "Izv. Krymsk. astrofiz. observ.", 1960, Vol. 22, pp. 144-149
(English summary)

TEXT: The momentary decrease in field intensity (pri) preceding the magnetic perturbation with sudden beginning may be caused by the dynamoeffect connected with the increase of ionization of the lower ionosphere. The compression of the magnetic Earth's field which begins at a distance of about $7 R_0$ propagates with the speed of a magnetic-hydrodynamic wave. Simultaneously, the energy of the fast particles surrounding the Earth (induction acceleration) increases. These particles moving along the lines of force reach the polar regions of Earth and there they increase the ionization. It is possible that the perturbation furthers the permeation of particles into the atmosphere. The increase in energy of particles reaching average latitudes is less. Hence the latitude distribution (pri) is explained. X

Translator's note: This is the full translation of the original Russian abstract. ✓
Author's summary
Card 1/1

9,9842 (also 1046)

3567
S/712/60/023/000/001/014
5213/5301

AUTHORS: Dvoryashin, A. S. and Odintsova, I. M.

TITLE: Formation of additional ionization in the E region of the ionosphere during strong magnetic storms

SOURCE: Akademiya nauk SSSR. Krymskaya astrofizicheskaya observatoriya. Izvestiya, v. 23, Moscow, 1960, 113-128

TEXT: The authors report on an analysis of experimental data on the formation of additional ionization in the E region during sudden magnetic storms. The main concern is with a number of new effects associated with strong magnetic storms. In particular, an analysis is reported on ionograms, the diurnal variation in the critical frequencies, and the minimum effective heights of the E layer during the magnetic storms of September 4, 1957, September 29, 1957, February 11, 1958, and July 8, 1958. The analysis indicates that the additional ionization in the regions below the E2 layer was due to corpuscular streams. These streams are also responsible for polar auroras and short-period pulsations in the mag-
Card (1/2)

Formation of additional ...

S/712/50/023/000/001/014
D213/D301

netic field with periods of 2 - 10 seconds. The corpuscular streams consist of fast particles which enter the atmosphere at middle latitudes. They are injected into the magnetic field during magnetic storms and may be accelerated in the geomagnetic field by a Fermi-type mechanism. These conclusions are shown to be consistent with artificial satellite and rocket data. There are 13 figures and 45 references: 13 Soviet-bloc and 27 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: L. A. Frank, J. Van Allen, Nature, 185, no. 4659, 1959; A. Chapman, Journ. Atm. Terr. Phys., 13, no. 1/2, 1959; B. Nichols, Proc. I.R.E., 47, no. 2, 1959; J. M. Watts, Journ. Atm. Terr. Phys. 15, no. 1/2, 1959. X

SUBMITTED: May 19, 1959

Card 2/2

29678
S/169/61/000/005/049/049
A005/A100

9.9100 (also 11.1)

AUTHORS: Dvoryashin, A.S., Odintsova, I.N.

TITLE: The connection of Pc geomagnetic pulsations with ionospheric processes

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1961, 33-34, abstract 5 G 272. (Izv. Krymsk. astrofiz. observ., 1960, v. 24, 16-25 (English summary))

TEXT: PcAR geomagnetic pulsations were investigated on the basis of high-speed recordings of the magnetic field that were obtained with the fluxmeter apparatus of the Crimean Astrophysical Observatory from June 1957 to December 1959. Inasmuch as solar corpuscular radiation is always present and the physical conditions in the ionosphere that determine the damping of hydromagnetic waves vary little with the season, the sharp seasonal variation of Pc AR calls into question the theory that Pc geomagnetic pulsations result from the earthward motion of hydromagnetic waves that are excited at the boundary of the earth's outer atmosphere by

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29678

S/169/61/000/005/049/049

A005/A130

The connection of Pc geomagnetic pulsations ...

solar corpuscular radiation. A sharp maximum of Pc AR appears at 8-9-10 o'clock local time that does not shift in time with the season. At the same time: 1) the lamination of the E-region becomes stable; 2) the magnitude $\Delta f^o F2$ (the deviation of the critical frequencies of the F2 layer from the slipping median) attains a maximum value; 3) the depression of the critical frequencies of the E layer is sharply expressed; 4) the amplitude of the static S_q -variation of the H-component of the magnetic field, which is caused by tidal effects in the ionosphere, attains a maximum value. The regular excitation of Pc AR geomagnetic pulsations and their stable maximum in the diurnal variation for local time in any season corroborate that the investigated effects are caused by a distinctive feature of the daily position of the observation point on earth relative to the sun. Such a feature is the passage of the observation point through a maximum of the electrodynamic force caused in the earth's magnetic field by the tidal motions generated in the conducting layers by the gravitational action of the sun. Earlier it was assumed that Pc AR pulsations result from the earthward motion of hydrodynamic waves excited at the outer boundary of the atmosphere by solar

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29678
S/169/51/000/005/049/049
A005/A130

The connection of Pc geomagnetic pulsations ...

corpuscular radiation. In the authors' opinion, geomagnetic pulsations are caused by processes in ionospheric layers in gravitational and magnetic fields. This being the case, it is possible to explain the seasonal and diurnal variations of Pc AR and their connection with other ionospheric effects. Owing to interaction of solar corpuscular radiation with the earth's outer atmosphere, the hydrodynamic excitation that is generated is actually propagated along the lines of force of the magnetic field up to the ionosphere, inducing disturbances in the magnetic field on the earth. Magnetic disturbances in the mechanism proposed by the authors for the excitation of Pc AR magnetic pulsations are the agents that drive the layers out of the equilibrium state.

Author's summary

[Abstractor's note: Complete translation.]

X

Card 3/3

DVORYASHIN, A. S.

"Ejection of Plasma with the Magnetic Field and Low-Energy Solar Cosmic Rays from the Region of Chromospheric Flares"

Report presented at the International Conference on Cosmic Rays and Earth Storm, 4-15 Sep 61, Kyoto, Japan.

31046

S/609/61/000/004/007/007
D207/D304

3.9110 (1121,1482)

AUTHOR: Dvoryashin, A. S.

TITLE: Short-period fluctuations of the geomagnetic field and their correlation with solar corpuscular radiation and with the ionosphere

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Organizatsionnyy komitet po provendeniyu Mezhdunarodnogo geofizicheskogo goda. Mezhdunarodnyy geofizicheskiy god; informatsionnyy byulleten'. no. 4, 1961, 107-130

TEXT: The author reports observations of geomagnetic field fluctuations recorded at the Krymskaya astrofizicheskaya observatoriya AN SSSR (Crimean Astrophysical Observatory, AS USSR). The Observatory lies at 34°E and records were obtained between July, 1957, and December, 1959. These records and the published data are analyzed to find the relationship of geomagnetic fluctuations with the solar corpuscular radiation and with ionospheric phenomena. The fluctuations had periods varying from 1 sec to several minutes and they

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Short-period fluctuations ...

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S/609/61/000/004/007/007
D207/D304

were recorded with fluxmeters forming an inductance circuit with an effective area of 10^9 cm^2 in the horizontal plane. The fluctuations were recorded on paper moving at 5mm/min. Some records were taken at 30 mm/min and higher speeds. The sensitivity of the apparatus was such as to record reliably the fluctuations of Pc (continuous) and Pt (decaying) types, as well as the rapid fluctuations during magnetic storms which are accompanied by aurora in middle and low latitudes. The fluctuations were classified according to the recommendations of the No. 10 Committee of the International Union for Geomagnetism and Aeronomy. The following conclusions were drawn from the analysis of the Pc fluctuations: (1) They could be divided into PcAR (regular), PcC (random, 30-90 sec period) and Pc^k (nightly, 6-12 sec period) groups; (2) the PcAR fluctuations varied seasonally with a maximum number of occurrences in summer and a minimum in winter; (3) the PcAR fluctuations showed also diurnal variation with a maximum at 09.00 - 10.00 hours local time; (4) the PcC fluctuations had a diurnal maximum in daytime but no seasonal variation; (5) Pc^k appeared most frequently at night-time but had no

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Short-period fluctuations ...

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D207/D304

marked seasonal variation; (6) during geomagnetically quiescent periods the diurnal variation of the Pc^k fluctuations was similar to the diurnal variation of the electron-density profile of the ionosphere; (7) the observed relationships contradict the theory that the Pc fluctuations are due to magnetohydrodynamic oscillations in the upper atmosphere because this theory predicts variation of the Pc period with latitude which is not observed in practice. Observations of the Pt fluctuations and of the rapid fluctuations during storms indicated that: (I) if the corpuscular radiation from the sun contains energetic protons and electrons, it can charge the radiation belt, but it can also discharge the belt, if it consists of low-energy particles; (II) during magnetic storms the radiation belt is partially discharged with particles following the geomagnetic field lines and this produces aurora and additional ionization at various heights, including the D-region; (III) during magnetic storms a system of currents is produced in the ionosphere and this system is responsible for bay-like perturbations; (IV) a complete theory of magnetic storms should be a synthesis of the magneto-

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Short-period fluctuations ...

hydrodynamic and dynamo theories; (V) on the dark side of the earth negative bays appear in the auroral zone; (VI) at middle and low latitudes a positive bay appears with accompanying geomagnetic fluctuations of Pt type; (VII) positive bay-like perturbations and the Pt fluctuations have strongly marked diurnal variation with a maximum near local midnight (in middle latitudes); (VIII) the Pt fluctuations show no marked seasonal changes; (IX) negative bay-like perturbations are accompanied not by the Pt fluctuations but by some indeterminate fluctuations, probably of PtC or random type. Acknowledgment is made to V. V. Gapeyev for preparing the experimental data for press. There are 20 figures, 1 table and 87 references / Abstractor's note: This is last reference mentioned in text. Exact number of references unknown, as pp. 129 et seq. missing. /.

4

ASSOCIATION: Krymskaya astrofizicheskaya observatoriya AN SSSR
(Crimean Astrophysical Observatory, AS USSR)

Card 4/4

S/035/62/000/006/020/064
A001/A101

AUTHORS: Vladimirskiy, B. M., Dvoryashin, A. S., Yeryushev, N. N.,
Molseyev, I. G., Neshpor, Yu. I., Ogir', M. B., Odintsova, I. N.

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 6, 1962, 58,
abstract 6A431 ("Izv. Krymsk. astrofiz. observ.", 1961, v. 26,
74 - 89, English summary)

TEXT: Information is given on observational data of the flare of August 22,
1958, obtained at the Crimean Astrophysical Observatory by means of coronagraph,
radio telescopes, ionospheric station, atmospheric, and geomagnetic station;
data on cosmic radiation (according to observations at a number of stations) are
also presented. There are 17 references.

Authors' summary

[Abstractor's note: Complete translation]

Card 1/1

3.1540
3,2430

38248
S/169/62/000/005/090/093
D228/D307

AUTHORS: Dvoryashin, A. S., Levitskiy, L. S. and Pankratov,
A. K.

TITLE: Chromospheric flares and solar corpuscular radiation
in high- and low-energy regions

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1962, 30-31,
abstract 5G223 (Izv. Krymsk. astrofiz. observ., 26,
1961, 90-135)

TEXT: The authors investigate the interrelation between absorp-
tion in high geomagnetic latitudes and the magnetic field's dis-
turbances in the period 1957-1959 in connection with the processes
in active regions on the sun. It is concluded from the analysis
of the experimental data that during the development of chromo-
spheric flares high-energy protons (10 - 100 Mev) are generated on
the sun and ejected from the regions of chromospheric flares sim-
ultaneously with the plasma clouds, causing magnetic storms on the
-earth. It is concluded from the great time lag in the arrival of

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Chromospheric flares and ...

S/169/62/000/005/090/093
D228/D307

protons (10 - 100 Mev) and from the duration and the isotropism of proton settling upon the polar cap that there are interplanetary magnetic fields. Their sources are local magnetic fields of the active regions, which are carried away by the movement of plasma. This deduction is confirmed by the fact that rapid arrivals of protons from flares are observed, if the flare previously arising in the given region induced a magnetic storm. This means that protons are injected into the approximately radial magnetic field, formed on the growth of the local magnetic field of the active regions by the movement of previously ejected plasma. A series of prolonged absorptions in the polar cap in the period 1957-1959 can be explained by the injection into such a field of high-energy protons, generated in flares arising in a given active region on its passage along the disc. While restraining the diffusion of generated protons throughout the solar system, the entrainable magnetic field at the same time causes a deeper and sharper Forbush abatement with a prolonged recovery. Since the magnetic field remains linked with the sun, it is already somewhat twisted by the latter's rotation at a distance of one astronomic unit. This de-

Card 2/3

DVORYASHIN, A.S.; LEVITSKIY, L.S.; PANKRATOV, A.K.

Active solar regions and their corpuscular emission. *Astron. zhur.*
38 no.3:419-438 My-Je '61. (MIRA 14:6)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.
(Solar radiation)

S/035/62/000/010/041/128
A001/A101

AUTHORS: Dvoryashin, A. S., Levitskiy, L. S.

TITLE: Solar corpuscular radiation during the descending branch
of the solar activity cycle

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 1962, 55,
abstract 10A377 ("Izv. Krymsk. astrofiz. observ.", 1962, v. 27,
167 - 177)

TEXT: The authors survey briefly empirical and theoretical investigations
of relation of geomagnetic disturbances to active regions on the Sun during the
descending branch of the solar activity cycle. Individual geomagnetic disturbances
are correlated with active regions on the Sun, whose indicators are flocculi,
during the period from February 1940 to May 1944. All the flocculi (active re-
gions) observed during this time are divided into two groups: flocculi of group
I which crossed the visible disk center or touched it at the instant of passing
through the central meridian, and flocculi of group II for which heliocentric
angle ψ , i.e., distance between the parallel of the visible disk center and the

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S/035/62/000/010/041/128
A001/A101

Solar corpuscular radiation during the...

flocculus part nearest to it, is equal or larger than 6° . Group II, in its turn, was divided into 2 subgroups: a) flocculi of group II_f located in the same hemisphere as the visible center (favorable hemisphere); b) flocculi of group II_u located in other hemisphere. Information on disturbances of magnetic field was taken from Geomagnetic Indices Cand. K., 1940 - 1946 (Washington, 1948). Data on flocculi of group I were obtained by E. R. Mustel' by inspecting Medona spectroheliograms and, for some cases, were obtained from the observatories Kodaikanal and Mound-Wilson. Data on the flocculi of group II were taken from synoptic charts of the chromosphere. The method of superposition of epochs was employed for investigating all flocculi groups, which yielded the following results: for central flocculi a right maximum at the phase $+5^d$ is observed; for non-central flocculi no stable regularity whatsoever exists. This confirms earlier conclusion on existence of radial corpuscular fluxes starting from active regions. Physical characteristics of slow corpuscular fluxes from the Sun are discussed on the basis of experimental and theoretical data. There are 56 references.

From author's summary

[Abstracter's note: Complete translation]

Card 2/2

3,2430

S/035/62/039/003/003/010
E032/E114

AUTHORS: Dvoryashin, A.S., Levitskiy, L.S., and Pankratov, A.K.

TITLE: X-ray emission of flares

PERIODICAL: Astronomicheskiy zhurnal, v.39, no.3, 1962, 428-438

TEXT: The authors describe a method of studying the X-ray emission of flares which involves the use of the minimum reflection frequencies f_{min} obtained from the world-wide network of ionospheric stations. The idea is that since the path traversed by the radiation in the atmosphere is different for different stations, the atmosphere may be looked upon as a type of filter, so that the energy of the photons reaching a particular station depends on its position in the atmosphere. The experimental data on chromospheric flares of importance 3 and 3+ were taken from the observatory working list of flares reported by H.W. Dodson and E.R. Hederman. Among flares of importance 2+ only proton flares were included in the analysis. Finally, radio bursts at 9400 Mc/sec and the minimum frequencies f_{min} were taken from published data of the Crimean Astrophysical Observatory and from Card 1/2

X-ray emission of flares

S/053/62/039/003/003/010
E032/E114

IGY data. Analysis of the relation between the time characteristics (onset, maximum, and termination) of X-ray and radio emission of flares on the one hand, and optical characteristics in the visible part of the spectrum on the other, has shown that the time dependence of the X-ray and radio emission is very nearly the same, but the H_{α} emission of flares begins earlier than the other two. Comparison of the minimum frequencies f_{min} recorded during ordinary and proton flares showed that there is considerable increase in the intensity of X-ray emission during proton flares. The energy of the ionising radiation has been estimated for the proton flares of March 23, 1958, and June 14, 1959. Assuming that the additional ionization in the ionosphere at tangential incidence of the radiation on the D layer occurs at about 60 km, it is shown that hard photons with energies of up to about 1 Mev should be generated in proton flares. There are 5 figures and 2 tables.

ASSOCIATION: Krymskaya astrofizicheskaya observatoriya Akademii nauk SSSR (Crimean Astrophysical Observatory, AS USSR)

SUBMITTED: December 26, 1961.
Card 2/2

S/712/62/028/000/017/020
E010/E401

AUTHOR: Dvoryashin, A.S.

TITLE: Proton flares in 1957-1961 and the geometry of the interplanetary magnetic field. I

SOURCE: Akademiya nauk SSSR. Krymskaya astrofizicheskaya observatoriya. Izvestiya. v.28. 1962. 293-304

TEXT: The author, together with L.S.Levitskiy and A.K.Pankratov, described in previous publications a number of active regions on the Sun, discovered during 1957-1961, in which development of chromospheric flares was accompanied by the generation of high-energy protons of 10 to 100 meV and ejection of the plasma with a frozen-in magnetic field, so-called "proton flares". Some proton flares were observed by M.B.Ogir' with the coronagraph of the Crimean Astrophysical Observatory. Information on the state of the ionosphere was obtained from the Arctic and Antartic Scientific-Research Institute (the ionospheric station on the Kheys island) and the Polar Geophysical Institute (the ionospheric station at Murmansk). Disturbances of the Earth's magnetic field were recorded on magnetograms obtained at the Magnetic Station of the Crimean Astrophysical Observatory and data on radio bursts
Card 1/4

Proton flares in 1957-1961 ...

S/712/62/028/000/017/020
E010/E401

were taken from the solar activity reports of various observatories. An analysis of the solar activity and associated geophysical phenomena during 1957-1961 led to the conclusion that intense chromospheric flares are accompanied by absorption of radio waves in the ionosphere at high geomagnetic latitudes, and proton flares are accompanied by radio bursts of type IV. Magnetic storms with sudden commencement follow, as a rule, absorption in the ionosphere. Observations of various manifestations of an association of solar activity with geophysical phenomena are described in detail and illustrated by numerous diagrams of proton flares and accompanying phenomena. The density of plasma clouds inducing magnetic storms was found to be over 100 proton/cm³. Plasma clouds ejected by the flares continue their radial motion and, therefore, the magnetic field in the vicinity of the Sun has a radial orientation. This is confirmed by the shape of coronal rays and inhomogeneities extending up to 15 to 20 solar radii from the Sun. Due to solar rotation, however, magnetic fields carried along by the moving plasma are somewhat curved at a distance of Earth's orbit and with increasing
Card 2/4

Proton flares in 1957-1961 ...

S/712/62/028/000/017/020
E010/E401

distance from the Sun the field acquires a marked azimuthal component. The effect of curving of the interplanetary magnetic field is manifested in the greater delay in arrival at the Earth of high-energy protons from the eastern Sun's hemisphere as compared to those from the western one. The effect of east-west asymmetry is thus a consequence of the geometry of the interplanetary magnetic field, and propagation of solar cosmic rays of low and high energies, injected into interplanetary space, testifies to the correctness of this concept. Another phenomenon of a special interest is repeated occurrence of chromospheric flares in the same active region. The author puts forward the following hypothesis as to the sequence of events. Plasma ejected during the development of the first flare (of a series in a given active region) carries along a magnetic field and forms a magnetic "bottle" whose field is closed in the active region. Subsequent proton flares inject high-energy protons into the generated radial magnetic field with included inhomogeneities in the form of magnetic clouds serving as scattering centers. If such scattering centers are absent,
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Proton flares in 1957-1961 ...

S/712/62/028/000/017/020
EO10/E401

protons propagate along the field in spiral trajectories at various angles to the force lines. This confirms the author's hypothesis that the magnetic field remains connected with the active region on the Sun where a plasma ejection took place. The proposed model of the interplanetary magnetic field, based on the analysis of IGY and IGC data, agrees with T. Gold's model (Astrophys. J. Suppl., 4, N 44, 1960). There are 10 figures.

SUBMITTED: December 25, 1961

Card 4/4

S/712/62/028/000/018/020
E010/E401

AUTHOR: Dvoryashin, A.S.

TITLE: Radio emission of proton flares. II

SOURCE: Akademiya nauk SSSR. Krymskaya astrofizicheskaya
observatoriya. Izvestiya. v.28. 1962. 305-319

TEXT: Proton flares create in interplanetary space a high radiation level by generating solar cosmic rays of low and relativistic energies. This presents a serious danger for manned flights and necessitates the development of a method for forecasting proton flares. The author aims therefore to investigate specific feature characteristics for proton flares, which include 1) configuration of magnetic fields in active regions generating proton flares, 2) intensity and spectrum of radio bursts accompanying these flares, 3) X-ray radiation, 4) geophysical phenomena associated with proton flares. The present article deals mainly with radio bursts accompanying proton flares. The author presents a list of 54 proton flares observed on the Sun from 1957 to 1961 and numerous graphs illustrating the development of various radio bursts. The list contains coordinates of flares which correspond to active regions. It is Card 1/3

Radio emission of proton ...

S/712/62/028/000/018/020
E010/E401

established that proton flares are originated exclusively in regions characterized by the complex structure of magnetic fields. This complex configuration is not restricted to the photosphere only but extends also into the upper chromosphere and corona, which is confirmed by radioastronomical data and polarization of radiation. These observational results are related to the fact that type IV radio bursts, accompanying proton flares, are in a wide range of frequencies, from centimeter to meter wavelengths. The class of a flare and intensity of IV-type radio bursts are most important characteristics of proton flares. Of 80 flares of classes 3 and 3+, 30% turned out to be proton flares. Intensity of radio emission at the maximum attains the order of $10^4 \times 10^{-22} \text{W/m}^2 \text{cps}$. There are mainly two phases, corresponding to different sources, in the evolution of type IV radio bursts, and polarization is observed for the whole range of frequencies, attaining 80% at a frequency of 1000 Mc. The first phase, lasting about 15 minutes, is characterized by continuous radiation at centimeter wavelength extending to frequencies over 250 Mcs. If the flare intensity is extremely high ($10^{-19} \text{W/m}^2 \text{cps}$) there arises a II-type burst. The second phase of the IV-type

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Radio emission of proton ...

S/712/62/028/000/018/020
E010/E401

burst, which follows mostly a II-type burst, is observed for a longer duration and is characterized by meter wavelength. The source of the second phase is located high in the corona and moves sometimes outwards, which indicates the transfer of plasma with magnetic field frozen-in into higher layers of the corona. During the first phase, high-energy electrons are generated and accelerated up to relativistic energies, 10^8 eV, by the Fermi mechanism. As a result of bremsstrahlung, X-ray radiation is generated whose maximum integrated flux coincides in time with the maximum of the first phase. The author concludes that the glow in integrated light of the most intense proton flares is due to the mechanism of synchrotron radiation whose spectrum extends toward shorter wavelengths, i.e. more penetrating. As a result, intense proton flares cause sudden ionospheric disturbances, recorded 5 to 6 hours from the subsolar point, so that X-ray quanta are incident along the tangent to the D-layer. There are 7 figures and 4 tables.

SUBMITTED: December 25, 1961

Card 3/3

ACCESSION NR: AT4032227

S/3089/63/000/005/0272/0285

AUTHOR: Dvoryashin, A. G.

TITLE: Proton flares during the period 1957—1961, and geometry of the interplanetary field

SOURCE: AN UkrSSSR. Mezhdovedomstvennyy geofizicheskiy komitet. Geofizika i astronomiya; informatsionnyy byulleten', no. 5, 1963, 272-285

TOPIC TAGS: solar active region, proton flare, plasma cloud, polar cap, ionospheric reflection frequency, magnetic perturbation, magnetic K-index, magnetogram, radio outburst, terrestrial orbit, solar cosmic ray

ABSTRACT: A series of active regions in which protons of high energy are generated has been detected during the period from 1957 to 1961. An interaction between the earth and the ejected plasma clouds depends upon the position of the active region on the sun. The starting and accumulation times of protons in the polar

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ACCESSION NR: AT4032227

cap were determined from measured variations of minimum ionospheric reflection frequencies. Geomagnetic perturbations caused by proton streams were evaluated from variations of the K index and determined from magnetograms. Proton flares are associated with strong radio outbursts of type IV. The density of plasma clouds causing magnetic storms is more than 10^2 protons/cm³. The magnetic field carried by a cloud is already twisted at the distance of the earth's orbit, while near the sun it is radial. This structural form of the magnetic field in interplanetary space is caused by high- and low-energy solar cosmic rays. Proton streams arrive at different velocities from the eastern and western solar hemispheres because of the twisted magnetic field. Orig. art. has: 10 figures and 2 tables.

ASSOCIATION: Kry*mskaya astrofizicheskaya observatoriya AN SSSR
(Crimean Astrophysical Observatory AN SSSR)

Card 2/3

ACCESSION NR: AT4032227

SUBMITTED: 00

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: ES

NO REF SOV: 020

OTHER: 019

Card 3/3

ACCESSION NR: AR4021621

S/0269/64/000/002/0062/0063

SOURCE: RZh. Astronomiya, Abs. 2.51.449

AUTHOR: Dvoryashin, A. S.

TITLE: Weak proton flares and polar cap absorption

CITED SOURCE: Izv. Krymsk. astrofiz. observ., v. 30, 1963, 221-249

TOPIC TAGS: high-energy proton, ionosphere, polar cap absorption, proton flare, radio emission, radio emission burst, solar corpuscular radiation, sun, solar activity, interplanetary magnetic field, solar wind, corpuscular stream, chromospheric flare, high-energy particle

TRANSLATION: It is demonstrated that the investigation of data on the minimum reflection frequency f_{\min} is a reliable method for detecting the flux of high-energy protons settling in the ionosphere at high geomagnetic latitudes. Investigation of the hourly values f_{\min} , recorded at ionospheric stations on the northern and southern polar caps during the International Geophysical Year and Internation-

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ACCESSION NR: AR4021621

al Geophysical Cooperation periods revealed a number of small increases f_{\min} associated with small proton flares. Identification of the flares was accomplished by taking into account the character of the radio emission burst. The criterion for identification of a proton flare is the simultaneous appearance of a type-IV radio emission burst. A comparison of f_{\min} in the northern and southern hemispheres revealed a sharply expressed seasonal variation in absorption. The seasonal dependence of absorption is associated with processes transpiring in the ionosphere. The lesser absorption in the polar cap in winter (or during the nighttime) can be attributed to a decrease of electron density as a result of attachment of electrons to O_2 molecules and the formation of negative ions. Investigation of a large number of cases of f_{\min} increase in the polar cap shows that there is no boundary between proton and ordinary flares. The same conclusion is drawn from an analysis of radio emission bursts. The problem of solar corpuscular radiation as the factor responsible for the appearance of a magnetic field in interplanetary space is discussed in detail. A model of an interplanetary magnetic field, in whose formation the solar wind, corpuscular streams from active regions and plasma clouds ejected during chromospheric flares are involved, is investigated by the "x-raying" of interplanetary space by high-energy particles

Card 2/3

ACCESSION NR: AR4021621

generated in flares. Bibliography of 70 titles. Author's abstract.

DATE ACQ: 09Mar64

SUB CODE: AS

ENCL: 00

Card 3/3

ACC NR: AR6032366

SOURCE CODE: UR/0313/66/000/007/0040/0040

AUTHOR: Dvoryashin, A. S.

TITLE: Geophysical characteristics of proton flares

SOURCE: Ref. zh. Issledovaniye kosmicheskogo prostranstva, Abs. 7.62.256

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2. M., Nauka, 1965, 92-98

TOPIC TAGS: solar X radiation, solar flare, solar corpuscular radiation, hard corpuscular radiation, proton burst, radio wave absorption, cosmic ray, cosmic ray propagation, proton, proton flare

ABSTRACT: The specific features of the following phenomena related to strong solar flares are briefly discussed: 1) type IV bursts; 2) solar X radiation (according to ionospheric data); 3) solar hard corpuscular radiation (according to data on radio-wave absorption in the polar regions of the earth); 4) generation and propagation of cosmic rays through interplanetary. The original has a bibliography of 19 titles. [Translation of abstract]

SUB CODE: 03/

Card 1/1

L 47361-66 ENT(1)/EGG GN

ACC NR: AR6029441

SOURCE CODE: UR/0169/66/000/005/A023/A023

AUTHOR: Dvoryashin, A. S. 4/6

TITLE: Geophysical characteristics of proton flares B

SOURCE: Ref. zh. Geofizika, Abs. 5A117

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2, M., Nauka, 1955, 92-98

TOPIC TAGS: solar flare, solar phenomenon, solar corpuscular radiation, radio emission, cosmic ray

ABSTRACT: Peculiarities of the following phenomena, connected with giant solar flares, are briefly discussed: a) type-IV radio bursts, b) x rays (according to ionosphere data), c) rigid corpuscular radiation (data according to absorption of radio emission in terrestrial polar regions), and d) generation and propagation of hydro-magnetic disturbances and cosmic rays through interplanetary space. Bibliography of 19 titles. [Translation of abstract] [NT]

SUB CODE: 03/

Card

1/1/71

UDC: 523.745

L 4 956-65 EEO-2/EED-2/EWT(1)/EEO(t) P1-4/Pj-4/Pk-4/Pl-4/Pm-4/Pn-4/Pac-4 WR

ACCESSION NR: AP5006598

S/0142/64/007/006/0756/0760

AUTHOR: Dvoryashin, B. V.; Zhukov, V. P.

42
B

TITLE: Signal-to-noise ratio at a beat-detector output

SOURCE: IVUZ. Radiotekhnika, v. 7, no. 6, 1964, 756-760

TOPIC TAGS: signal noise ratio, phase difference radar 24

ABSTRACT: A block diagram of a phase-difference-measuring device comprises these cascade-connected units: an IF amplifier to which two frequencies and noise are applied, a nonlinear element producing a corresponding combination frequency, and a narrow-band output filter yielding the difference (beat) frequency. Formulas for energy spectra of the beat frequency and noise (bell-shaped, square) are developed, and the beat-frequency signal-to-noise ratio (SNR) is compared with that of a typical frequency mixer. The results show that the beat-detector SNR may considerably exceed the frequency-mixer SNR. Orig.

Card 1/2

L 40956-65

ACCESSION NR: AP5006598

art has: 2 figures, 13 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 11Apr63

ENCL: 00

SUB CODE: EC, DC

NO REF SOV: 001

OTHER: 001

Card 2/2 MB

DVORYASHIN, V.I., professor, doktor tekhnicheskikh nauk; AKHUTIN, A.N.,
professor, otvetstvennyy redaktor; LEONT'YEVSKIY, B.B., redaktor;
ASTAF'YEVA, G.A., tekhnicheskiiy redaktor

[The time required for emptying the filling water reservoirs]
Vremia oporozhneniia i napolneniia vodokhranilishch. Moskva,
Izd-vo Akad. ii nauk SSSR, 1953. 46 p. [Microfilm] (MLRA 7:10)
(Water-supply engineering)

SIROTKIN, Vasilii Pavlovich, prof., doktor tekhn. nauk; DVORYASHIN, V.I., prof., doktor tekhn. nauk, retsenzent; SAMGIN, A.N., prof., retsenzent; KOLODYAZHNAYA, Zh.A., red.

[Water intakes; models, diagrams, and hydraulic calculations]
Vodopriemnye sooruzheniia; tipy, skhemy, gidravlicheskie rascheti. Moskva, Vysshaia shkola, 1965. 79 p. (MIRA 18:6)

DVORYASHINA, M.D.

Structure of space perceptions; based on the data of recent
Japanese research. Vop. psikhol no.3:170-175 My-Je '63.

(MIRA 17:2)

1. Kafedra psikhologii Leningradskogo gosudarstvennogo universiteta.

DVORYASHINA, M.D.

Continuity of perception in children. Vop. psikhol. no.5:42-54
S-O 64 (MIRA 18:1)

1. Kafedra psikhologii Leningradskogo gosudarstvennogo universiteta.

MARSHALEK, Ya. [Marsalek J.]; STEGLIKOVA, Ya. [Stehlikova J.];
DVORZHACHEK, Gn. [Dvorzacek, G.]

Data on histological examination in tuberculosis of the adnexi
uteri treated by the conservative method. Akush.i gin. 36
no.5:88-90 S-0 '60. (MIRA 13:11)

1. Iz akushersko-ginekologicheskoy kliniki (zav. - professor d-r
Yan Marshalek) Patologoanatomicheskogo instituta (zav. - dotsent
d-r Chetmir Dvorzhachek) i Meditsinskogo fakul'teta Universiteta
imeni Palatskogo (gorod Olomouts Chekhoslovakiya).
(GENERATIVE ORGANS, FEMALE—TUBERCULOSIS)

DVORZACZKOVA, Ivana; SZYMANSKA-BAJERSKA, Danuta

2 cases of Hamman-Rich syndrome. Gruzlica 29 no.9:805-813 S '61.

1. Z Zakladu Anatomii Patologicznej Wydzialu Lekarskiego Uniwersytetu Karola w Hradcu Krolowej Kierownik: prof. Sc. Dr MUDR A. Fingerland.

(PULMONARY FIBROSIS case reports)

L 17935-65 EWT(m)/EPE(c)/EPA(w)-2/EWP(j)/T PC-4/Pab-10/Pr-4 SSD/AFWL RM/
ACCESSION NR: AP4049564 RWH/WH S/0069/64/026/006/0657/0661

AUTHOR: Blizhek, L. (Czechoslovakia); Dvorzhak, E. (Czechoslovakia);
Myshik, S. (Czechoslovakia) B

TITLE: Agglomeration of ¹⁵butadiene-styrene latex particles by freezing. 1. Ef-
fect of various emulsifying agents, the pH of latex, and the freezing temperature
on the agglomeration of butadiene-styrene latex

SOURCE: Kolloidnyy zhurnal, v. 26, no. 6, 1964, 657-661

TOPIC TAGS: colloid, emulsifying agent, surface tension, agglomeration,
coagulation, freezing temperature effect, pH effect, emulsifying agent effect

ABSTRACT: This study was made in order to clarify the agglomeration mechanism
of butadiene-styrene polymer particles. The degree of agglomeration is deter-
mined by the change in surface tension of the latex. Results are given in Tables
1, 2, and 3 of the Enclosure. The data lead to the conclusion that 1) the nature
of the lyophobic part of the emulsifying agent² exerts an appreciable effect on
the agglomeration of the polymer particles of butadiene-styrene during freezing,
2) the resistance of the polymer particles to agglomeration and coagulation in-

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L 17935-65

ACCESSION NR: AP404954

creases with the pH increase of the nonagglomerated latex, and 3) the degree of agglomeration of the polymer particles increases with the decrease in freezing temperature and at very low temperatures the agglomeration changes to coagulation. Orig. art. has: 3 tables.

ASSOCIATION: none

SUBMITTED: 20Jan63

ENCL: 03

SUB CODE: OC, MT

NO REF SOV: 002

OTHER: 010

Card 2/5

L 17935-65
ACCESSION NR: AP4049564

ENCLOSURE: 01

Table 1. The pH and surface tension of latex

Emulsifying agent	pH of latex	Latex surface tension, dyn/cm
Potassium acid stearate	9.5	70
Potassium acid palmitate	9.2	69
Potassium acid myristate	9.0	70
Potassium acid laurate	8.8	68
Potassium soap of synthetic fatty acids	9.0	68
Nekal	8.5	68
Sodium mersolite	8.6	67
Potassium acid oleate	8.8	67
Colophony potassium soap	9.4	69

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L 17935-65
 ACCESSION NR: AP4049564

ENCLOSURE: 02

Table 2. The pH and freezing temperature effects on the agglomeration of polymer particles

The pH of latex	Freezing temperature, °C					Freezing temperature, °C				
	-10	-15	-20	-25	-30	-10	-15	-20	-25	-30
	Surface tension, dyn/cm					Surface tension, dyn/cm				
	Potassium acid myristate					Potassium acid laurate				
8,0	36	K	K	K	K	40	38	K	K	K
8,5	36	20	20	K	K	47	41	38	57	35
9,0	38	29	29	K	K	48	42	41	39	37
9,5	41	30	29	K	K	49	43	42	41	38
10,0	43	35	31	K	K	50	44	43	42	40
10,5	44	38	32	K	K	50	44	44	43	40
11,0	45	30	35	33	K	50	45	44	43	41
	Potassium soap of synthetic fatty acids					Potassium acid oleate				
8,0	48	47	K	K	K	36	30	29	28	K
8,5	51	48	47	46	45	42	31	30	29	29
9,0	53	50	48	47	46	43	36	35	32	32
9,5	52	50	48	47	46	43	36	36	33	32
10,0	52	50	48	47	46	42	36	36	33	33
10,5	53	51	48	48	46	42	36	36	34	33
11,0	53	51	49	46	47	43	37	36	35	34
11,5	—	—	—	—	—	43	39	37	36	35

K - formation of a coagulum

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L 17935-65

ACCESSION NR: AP4049564

ENCLOSURE: 03

Table 3. The effects of pH and freezing temperature on the agglomeration of polymer particles in the presence of mersolite as the emulsifying agent

The pH of latex	Freezing temp., °C					The pH of latex	Freezing temp., °C				
	-10	-15	-20	-25	-30		-10	-15	-20	-25	-30
	Surface tension, dyn/cm						Surface tension, dyn/cm				
3.0	42	37	34	33	32	9.0	46	43	41	37	35
5.0	43	40	38	34	33	9.5	47	43	42	37	36
7.0	44	41	39	35	34	10.0	47	43	41	38	36
8.0	46	43	41	37	36	11.0	47	43	41	38	36
8.5	46	43	41	37	36						

Card 5/5

L 63836-65 EWT(m)/EPF(c)/EWP(j) RM

ACCESSION NR: AP5020227

UR/0069/65/027/004/0563/0568

541.13:041.3

AUTHORS: Myshik, S.; Blazhek, L.; Dvorzhak, E.

TITLE: Agglomeration of butadiene-styrene latexes by freezing. 3. Effect of butadiene-styrene ratio in the copolymer

SOURCE: Kolloidnyy zhurnal, v. 27, no. 4, 1965, 563-568

TOPIC TAGS: butadiene styrene rubber, freezing, copolymerization

ABSTRACT: The effect of the nature of the polymer particle (the ratio of butadiene to styrene) on the behavior of latexes during freezing and thawing was investigated, with potassium oleate used as emulsifier. The polymerization method is given for the studies. The agglomeration by freezing was carried out at various temperatures, and the degree of agglomeration was determined by the change in the surface tension of the latex. Polybutadiene latex contains elastic "flexible" polymer particles, polystyrene-- "rigid" polymer particles. The higher the content of bound styrene in the butadiene-styrene copolymer, the more easily agglomeration passes to coagulation. The agglomeration of polystyrene latex particles in different amounts of styrene with continuous stirring at 20C was investigated,

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L 63836-65

ACCESSION NR: AP5020227

with the pH of latex before agglomeration set up to 10.0. Polystyrene particles swollen in styrene are more resistant to coagulation on freezing than non-swollen ones. At 0.30 degree of swelling, latex coagulates upon thawing, whereas at 0.50 latex agglomerates at -20C. The effect of the monomer conversion on the agglomeration of latex at a ratio of 40-60 butadiene-styrene was investigated. It was found that at high monomer conversions, i.e., at low swelling of polymer particles, agglomeration passes to coagulation. At -10C latex undergoes agglomeration to 90% monomer conversion, at -20C to about 88%. The effect of molecular weight of polystyrene on the agglomeration of polystyrene latexes was investigated by using a molecular weight regulator (diisopropylzanthogen disulfide = di-oxide). The viscosity varied from 0.2 to 0.8 as the dipoxide content decreases from 2.0 to 0.25. It was found that, upon thawing, polystyrene latexes with an intrinsic viscosity of 0.2-0.8 underwent coagulation in all cases. The molecular weight of polystyrene in the indicated limits of intrinsic viscosity of the polymer does not affect the agglomeration of polystyrene latex. After discussing the work of other investigators in this field, it was concluded that the prerequisites for agglomeration of polymer particles upon freezing are: 1) retention of the condensed liquid emulsifier film on the surface of the polymer particle; 2) the hydrophobic part of the emulsifier should not markedly increase the brittleness of the outer surface layer of the polymer particle; 3) the emulsifier must be able to move to newly formed large particles; and 4) the T_{glass} of the polymer

Card 2/3

L 63836-65

ACCESSION NR: AP5020227

of latex particles must be lower than the freezing temperature necessary for agglomeration. Orig. art. has: 4 tables.

ASSOCIATION: none

SUBMITTED: 08May63

ENCL: 00

SUB CODE: MT
etc

NO REF SOV: 005

OTHER: 008

jk
Card 3/3

DVORZHAK, Frantisek [Dvorak, Frantisek]

Occurrence of some species of the genus Hesperis L. in the
U.S.S.R. Bot.zhur. 50 no.2:218-219 F '65.

(MIRA 18:12)

1. Universitet imeni Ya.E.Purkin'ye, Brno, Chekhoslovatskaya
Sotsialisticheskaya Respublika. Submitted July 25, 1964.

DVORZHAK, S., tekhnolog

How we improve the quality of cement-sand roofing tiles. Sil'. bud.
10 no.11:17. N '60. (MIRA 13:11)

1. Korostishevskaya meshkolkhoz'naya stroitel'naya organizatsiya Zhitomirskoy oblasti.
(Zhitomir Province--Tiles, Roofing)

DVORZHAK, S., tekhnolog

How we mechanized the loading and unloading of brick in a kiln.
Sil'. bud. 11 no.4:20 Ap '61. (MIRA 14:6)

1. Kirpichnyy zavod Korostishevskoy mezhkolkhoznoy stroitel'noy
organizatsii Zhitomirskoy oblasti.
(Loading and unloading)
(Ukraine--Kilns)

DVORZHETS, S.A.

IOKTON, B.I.; DVORZHETS, S.A.

We repair wheel pairs of diesel locomotives in the shop. Elek.i
tepl.tiaga no.10:34-35 0 '57. (MIRA 10:11)

1. Starshiy master kolesnogo tsekha Omskogo lokomotivnogo depo
(for Iokton). 2. Nachal'nik tekhnicheskogo otdela Omskogo
otdeleniya dorogi (for Dvorshets).

(Locomotives--Maintenance and repair)

24(7)

SOV/48-23-9-47/57

AUTHORS: Vasil'yeva, V. N., Dvorzhetskaya, L. A., Markovskiy, L. Ya.,
Khlebnikova, L. Ya. ~~.....~~

TITLE: The Spectral Analysis of Luminophore-pure Sulfides and Zinc
Sulfates With the Application of Chemical Enrichment

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 9, pp 1153 - 1154 (USSR)

ABSTRACT: For the production of synthetic luminophores it is necessary
to produce pure zinc sulfides. For this purpose a method
of analysis was developed, which permits the determination
of micro-quantities of Cu, Fe, Ni and Co in these preparations.
The method, which was developed at the IREA, is complicated
and takes too long. In the case under investigation, the con-
tent of Cu, Fe, and Ni and Co must not exceed $5 \cdot 10^{-6}\%$, $5 \cdot 10^{-5}\%$
and $1 \cdot 10^{-5}\%$ respectively. As a direct spectral analysis does
not have the necessary sensitivity in order to determine such
small quantities (with the exception of Cu), chemical enrich-
ment is necessary: 10 g of zinc sulfide is dissolved in HCl
and converted to $ZnSO_4$. This solution is then enriched. For
the direct analysis of $ZnSO_4$ the same method is used; enrich-

Card 1/2

The Spectral Analysis of Luminophore-pure Sulfides and Zinc Sulfates With the Application of Chemical Enrichment SOV/48-23-9-47/57

ment in the first case is roughly 100-fold and in the second about 50-fold. The spectroscopic analysis was also carried out on weakly acid solutions of zinc chlorides in water with micro-admixtures. A direct current arc was used as a light source. The sensitivities of this determination of Ni, Cu, Fe, and Co from the two solutions are given. The mean arithmetical error is 15% for Co, 25% for Ni, and Fe, and 60% for Cu. There are 1 figure and 8 references, 3 of which are Soviet.

ASSOCIATION: Gosudarstvennyy institut prikladnoy khimii (State Institute of Applied Chemistry)

Card 2/2


S/032/62/028/001/003/017
B125/B138

AUTHORS: Khlebnikova, L. Ya., Vasil'yeva, V. N., and
Dvorzhetskaya, L. A.

TITLE: Increase in the sensitivity of substances with pure
luminophore properties

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 1, 1962, 45-46

TEXT: The sensitivity of the spectral analysis of Ni and Co in zinc sulfide, cadmium sulfide and cadmium selenide can be increased by about two orders of magnitude if the impurities are concentrated by evaporation in the case of the first two or chemical enrichment for the selenide. G. I. Kibisov and M. I. Rezvov (Inzhenerno-fizicheskiy zhurnal, No 6, 47 (1959) increased the sensitivity of analysis of ZnS for Ni and Co to $1 \cdot 10^{-5}$ - $3 \cdot 10^{-5}\%$. The following optimum experimental conditions hold for the analysis of zinc sulfide by the reversed evaporation method used by D. M. Shvarts and L. N. Kaporskiy (Zavodskaya laboratoriya, XIII, 11, 1309 (1957): weight of sample 1 g, temperature 550°C , evaporation 30 min
Card 1/2



Increase in the sensitivity ...

S/032/62/028/001/003/017
B125/B138

Drops of the concentrate in solution are applied to the carbon electrodes and then evaporated in a d-c arc. Accuracy, using an ИСП-28 (ISP-28) spectrograph is $5 \cdot 10^{-6}\%$ with an error of 20%. The concentrate was enriched a hundred times in copper and iron. By double evaporation the accuracy of Ni and Co determination could be increased to $1 \cdot 10^{-6}\%$ and $2 \cdot 10^{-6}\%$, respectively. Ni and Co in cadmium sulfide can be determined with an accuracy of $5 \cdot 10^{-6}\%$. Ni and Co in cadmium selenide were determined with an accuracy of $2 \cdot 10^{-6}\%$ and $5 \cdot 10^{-6}\%$ with a maximum error of 20%. The evaporation method is simpler and the sample is less contaminated than with chemical enrichment. This paper was the subject of a lecture delivered at the Soveshchaniye po spektroskopii (Conference on Spectroscopy) in July 1961 in Gor'kiy. There are 4 Soviet references.

ASSOCIATION: Gosudarstvennyy institut prikladnoy khimii (State Institute of Applied Chemistry)

Card 2/2

20852

9.4160 (also 1153, 1395)

S/048/61/025/003/041/047
B104/B203

AUTHORS: Dvorzhetskaya, L. A., Khlebnikova, L. Ya., and Shvaneva, M. K.

TITLE: Spectrum analysis of some luminophore-pure substances and some luminophores

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 3, 1961, 422-423

TEXT: This paper was read at the 9th Conference on Luminescence (Crystal Phosphors) in Kiyev, June 20-25, 1960. The authors attempted to study, by means of emission spectrum analysis, luminophore-pure substances and luminophores examined at the laboratoriya svetosostavov Gos. in-t prikl. khimii (Laboratory of Luminescent Substances of the State Institute of Applied Chemistry). Zinc sulfide was detected in nearly all luminophore-pure substances; the method developed by G. I. Kibisov et al. (Kibisov G. I., Rezvova M. I., Vinnichenko E. N., Materialy X Soveshchaniya po spektroskopii, v. 2, p. 417, Izd. L'vovsk. un-ta, 1958) for direct spectrum analysis makes use of this circumstance, a chemical enrichment being conducted

Card 1/3

20852

Spectrum analysis of some...

S/048/61/025/003/041/047
B104/B203

previously. The other substances were studied by direct spectrum analysis, since all of them had been analyzed before. The analysis was made by complete evaporation of the specimen in the crater of a carbon electrode; the spectral apparatus consisted of a quartz spectrograph of medium dispersion. It was possible to photograph the spectra. Quantitative analyses were made with the aid of standards. Table 1 compiles the results of quantitative spectrum analysis of luminophore-pure substances. The error of determination is $\pm 15\%$. Table 2 gives results of further luminophores. The authors thank L. Ya. Markovskiy for advice and interest. There are 2 tables and 5 Soviet-bloc references.

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S/048/61/025/005/041/047
B104/B203

Spectrum analysis of some...

Legend to Table 1:
(1) Substance to be analyzed, (2) method, (A) direct, (B) chemical enrichment, (C) physical enrichment.

1 Анализируемое вещество	2 Метод	10 ⁻³ С. %				
		Cu	Fe	Ni	Co	Mn
ZnS	В Прямой	0,5	5	5	10	5
ZnS	Химическое обогащение	0,001	0,1	0,2	0,4	—
ZnS	Физическое* обогащение	—	—	1	1	—
CdS	C Прямой	0,7	8	5	10	—
PbS		3	5	5	10	3
ZnSe		1	50	20	40	5
CdSe		1	50	20	40	5
CaHPO ₄ (27% раствор)		5	50	—	—	—
(NH ₄) ₂ CO ₃ (20% раствор)	5	—	—	—	—	

Legend to Table 2:
(1) Luminophore, (2) element determined, (3) on the basis of SrS, (4) on the basis of CaHPO₄, (5) luminophore of the type ФКП-03(ФКР-03), (6) luminophore of the type К-5(K-5)

Table 2

1 Луминофор	2 Элемент	С. %
3 На основе SrS	Cu	1·10 ⁻⁴ +1·10 ⁻³
	Bi	0,001 +0,1
4 На основе CaHPO ₄ ФКП-03	Sb	0,1 +4,5
	Fe	5·10 ⁻³ +1·10 ⁻²
5 К-5	Fe	5·10 ⁻⁶ +1·10 ⁻³
	Cu	5·10 ⁻⁶ +1·10 ⁻⁴

Card 3/3

KHLEBNIKOVA, L.Ya.; VASIL'YEVA, V.N.; DVORZHETSKAYA, L.A.

Increasing the sensitivity of the spectral analysis of
pure luminophors. Zav.lab. 28 no.1:45-46 '62.

(MIRA 15:2)

1. Gosudarstvennyy institut prikladnoy khimii.

(Spectrum analysis)

(Phosphors)

L 12844-65 ASD(a)-5/AS(mp)-2/APGC(b)/BSD/RAEM(i)/ESD(gs)/ESD(t)

ACCESSION NR: AT4044999

S/3110/64/000/051/0107/0110

AUTHOR: Khlebnikova, L. Ya.; Dvorzhetskaya, L. A.; Shvaneva, M. K.

TITLE: Application of emission spectral analysis to luminophors and substances of luminophor purity

SOURCE: Leningrad. Gosudarstvennyy Institut prikladnoy khimii. Trudy*, no. 51, 1964. Khimiya i tekhnologiya lyuminoforov (Chemistry and tekhnology of luminophors) 107-110

TOPIC TAGS: luminophor, emission spectrum, emission spectroscopy, spectrographic analysis, zinc sulfide, cadmium sulfide, lead sulfide, zinc selenide, cadmium selenide, lead selenide, calcium phosphate, zinc phosphate, strontium phosphate, ammonium phosphate, ammonium carbonate, strontium sulfide, calcium halophosphate, copper, iron, nickel, cobalt, manganese, bismuth, antimony

ABSTRACT: The authors describe the use of emission spectroscopy for the simultaneous determination of microquantities of Cu, Fe, Ni, Co and Mn in zinc, cadmium and lead sulfides and selenides, as well as of Cu and Fe in calcium, strontium and zinc phosphates, Cu in ammonium phosphate and carbonate, Cu, Bi, Li and K in luminophors based on strontium sulfide, Sb in a halophosphate luminophor, and Cu and Fe in zinc sulfide luminophors. The technique is described in detail (evapora-
Card 1/2

I 12844-65

ACCESSION NR: AT4044999

tion from a carbon anode at a direct current of 8-15 amperes, the spectra being recorded on an ISP-28 spectrograph and compared with standards). In addition to the use of direct spectral analysis, ZnS was also enriched by chemical and physical means; chemical enrichment was also used for cadmium selenide, and physical enrichment for cadmium sulfide. The results, which are given in detail for each compound, showed satisfactory accuracy and a sensitivity in the range of 1×10^{-6} to 5×10^{-4} % for most of the impurities.

ASSOCIATION: Gosudarstvennyy Institut prikladnoy khimii, Leningrad (State Institute of Applied Chemistry)

SUBMITTED: 00

ENCL: 00

SUB CODE: IC,OP

NO REF SOV: 008

OTHER: 000

Card 2/2

L 10681-65 EWT(m)/EWP(b) AEDC(a)/ASD(d)/ESD(ga)/IJP(c) JD

ACCESSION NR: AT4045000

S/3110/64/000/051/0111/0116

AUTHOR: Khlebnikova, L. Ya.; Dvorzhetskaya, L. A.

TITLE: Spectral analysis of zinc and cadmium sulfides previously enriched with micro-impurities by the method of evaporation in a vacuum

SOURCE: Leningrad. Gosudarstvennyy institut prikladnoy khimii. Trudy*, no. 51, 1964
Khimiya i tekhnologiya lyuminoforov (Chemistry and technology of luminophors), 111-116

TOPIC TAGS: zinc sulfide, cadmium sulfide, zinc chloride, cadmium chloride, luminophor, spectral analysis, microimpurity, enrichment, vacuum evaporation, nickel determination, cobalt determination

ABSTRACT: A simple apparatus for the evaporation of samples in a vacuum was constructed and used to increase the concentration of Ni and Co in luminophor materials. In experiments with zinc sulfide, the sample was first heated for 15 minutes at 600C. During a gradual increase in temperature to 800C in a vacuum, the material began to decompose with evolution of metallic zinc in the form of a black deposit on the cold part of the tube. On top of the black deposit, a yellow film formed. It was therefore decided to convert the zinc sulfide into zinc chloride. The conditions for sublimation of zinc chloride were the same as those for zinc sulfide. The optimal conditions of evaporation were 500-750C for

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L 10681-65

ACCESSION NR: AT4045000

7-120 minutes. The sensitivity of spectral analysis following enrichment by this method was $5 \times 10^{-6}\%$ for both Co and Ni. Double distillation increased the sensitivity to $1 \times 10^{-6}\%$ for Ni and $2 \times 10^{-6}\%$ for Co. Heating of cadmium sulfide produced the same problems as with zinc sulfide; therefore, conversion to CdCl_2 was again performed. Evaporation was carried out at a pressure of 3×10^{-2} mm Hg for 30 minutes at 620C. The sensitivity of spectral analysis by this method was $5 \times 10^{-6}\%$ for both Ni and Co. Simultaneously with Ni and Co enrichment, increases in the concentration of Fe, Cu, Au and Mn were noted. Orig. art. has: 3 figures

ASSOCIATION: Cosudarstvennyy institut prikladnoy khimii, Leningrad (State Institute for Applied Chemistry)

SUBMITTED: 00

ENCL: 00

SUB CODE: IC

NO REF SOV: 008

OTHER: 002

Card 2/2

DVORZHETSKIY, V.A.; GAL'CHINSKAYA, V.V., tekhn. red.

[Textbook on descriptive geometry]Uchebnoe posobie po nachertatel'noi geometrii. Leningrad, Leningr. elektrotekhn. in-t sviazi im. M.A.Bonch-Bruevicha, 1961. 43 p. (MIRA 15:12)
(Geometry, Descriptive)