VITINSKIY, Yu.I.

Methods for the prediction of quarterly Wolf numbers. Astron. zhur. 38 no.4:714-725 Jl-Ag '61. (MIRA 14:8)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
(Sunspots)

S/214/62/000/007/002/002
D405/D301

AUTHOR: Vitinskiy, Yu.I.

TITLE: On the peculiarities of the sunspot activity during the current 2-year cycle

PERIODICAL: Solnechnyye dannyye, no. 7, 1962, 66-75

TEXT: The following aspects of sunspot activity are discussed: The nature of the current 2-year cycle for the entire solar disc; the distribution of the groups of spots according to their size; the fine structure of the Spörer drift of the sunspot zone; the latitudinal-longitudinal distribution of the sunspot activity; the development of the current two-year cycle in various longitudinal intervals of the northern and southern solar hemispheres. The author examines two of M. Waldmeier's conclusions (Zs. Astrophys., 43. 149, 1957). The first of these is indirect proof that the 19th cycle belongs to the maximum epoch of an 80-90 year cycle. The second conclusion, that the total power of the two-year cycle is practically the same in both solar hemispheres during the maximum epoch, cannot be regarded as firmly established. The number of groups of

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spots are listed in a table according to their size. Another table shows the distribution of the spot groups according to their lifetime. It was found that the annual sums of the areas of the spot groups and the mean lifetime of the groups vary synchronously. In the southern hemisphere Spörer's law is basically the same for groups of different size. The 19th cycle confirms the existence of a close connection between the altitude of the maximum of the two-year cycle and the mean spot-latitude during the maximum epoch (as established in the references). Concerning the latitudinal-longitudinal distribution of the sunspot activity, it was found that the latitudinal fragmentation of the solar activity is much more pronounced in the northern solar hemisphere than in the southern. The active latitudes 320-280° of the northern hemisphere, which exist already for 6 cycles, is of particular interest; the same applies to the northern latitudes 200-160°, and to the southern latitudes 200-160°. The development of the current two-year cycle is analyzed by means of a table listing the basic characteristics necessary for specifying the cycle-like longitudines obtained from data relating to 8 years of the current cycle. There are 2 figures and 4 tables.

PHASE I BOOK EXPLOITATION SOV/6369

Vitinskiy, Yuriy Ivanovich

Prognozy solnechnoy aktivnosti (Forecasting Solar Activity) Moscow, Izd-vo AN SSSR, 1963. 150 p. Errata slip inserted. 1700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Glavnaya astronomicheskaya observatoriya.

Resp. Ed.: V. A. Krat, Professor; Ed. of Publishing House: I. V. Barkovskiy; Tech. Ed.: R. A. Zamarayeva.

PURPOSE: This book is intended for astronomers, astrophysicists, geophysicists, and others concerned with solar-terrestial relations.

COVERAGE: Empirical statistical methods of forecasting solar activity, particularly those employing Wolf numbers, are reviewed. Questions dealing directly with the problem of forecasting the indices of spot-forming solar activity and long-, medium-, and extralong-range forecasting techniques are discussed. Present methods of extralong-

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range forecasting give very unsatisfactory results; however, the Gleissberg and Ol' approaches are considered most promising in extralong-range forecasting of Wolf numbers. A morphological approach that would examine the development of activity centers in all layers of the solar atmosphere is recommended. Investigations of solar radio emissions in the cm-range (Molchanov and Ikhsanova) make it possible to investigate the invisible solar hemisphere one or two days before the appearance of a spot group from behind the eastern limb on the visible hemisphere. The increased use of such techniques in short-term forecasting is recommended. It is believed that indices of activity other than the Wolf numbers must be found, and the need for a comprehensive theory of solar activity is noted. Present research is directed toward the accomodation of Bjerknes' hydrodynamic theory with Alfven's magnetohydrodynamic wave theory. While magnetic studies are indispensible in formulating a new and comprehensive theory of solar activity, studies involving the differential rotation of the sun and its relation to solar magnetic energy are not believed to be useful. There are 142 references: 58 Soviet and 84 non-Soviet.

ACCESSION NR: AP4007593 S/0214/63/000/003/0064/0070

AUTHOR: Vitinskiy, Yu. I.

TITLE: The problem of active longitudes on the sun

SOURCE: Solnechny*ye danny*ye, no. 3, 1963, 64-70

TOPIC TAGS: solar longitude, active longitude, longitude interval, eleven year cycle, zero point, sunspot, sunspot formation, photospheric facula, isoline map, mean longitude gradient, effective center, solar meridian

ABSTRACT: The position of the active solar longitudes is studied by the method of isolines. Choice of an unsuitable scale for measuring active areas in longitudinal direction, or of an incorrect zero reference point may lead to erroneous results when this method is used. The Deslandres' 30° longitudinal scale unit was chosen, because it covers the population belt of recurrent sunspots. Maps of isolines of sunspot areas have been drawn on which the active regions were segregated from others. That zero point was chosen which yielded the greatest

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ACCESSION NR: AP4007593

mean longitudinal gradient in the maximum area of sunspots. The zero points of the Northern and Southern Hemispheres did not coincide in many cases. An irregular oscillation of the positions of active solar longitudes was noted on the maps which had been drawn and an attempt was made to find more accurate positions of the centers of active longitudes. The centers were shifted in one direction in the Northern Hemisphere but no such definite direction was noted in the Southern Hemisphere. Vitinskiy concludes that the subphotospheric layers associated with active longitudes rotate faster in some 11-year cycles and slower in others. Orig. art. has: 2 formulas, 3 figures, and 3 tables.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 21Jan64	ENCL: 00
SUB CODE: AS	NO REF SOV: 001	OTHER: 003

Card 2/2

L 04288-67 EWT(1) GW

ACC NR: AR6004673 SOURCE CODE: UR/0269/65/000/010/0043/0043

AUTHORS: Vitinskiy, Yu. I.; Ikhasanov, R. N. 29 B.

TITLE: Some characteristics of the magnetic field discharge of spots on the surface of the sun

SOURCE: Ref. zh. Astronomiya, Abs. 10.51.315

REF SOURCE: Solnechnyye dannyye, no. 10, 1964(1965), 57-63

TOPIC TAGS: solar magnetic field, solar disturbance, solar photosphere, sunspot

ABSTRACT: An attempt is made to explain the regularities of direct magnetic field discharge of spots on the surface of the sun up to the moment of maximum development of the total area of the spot group. Data from "Greenwich Photo-Heliographic Results" for 1917--1955 are used as the original material for study of the separation of spots in a group. The following results are obtained: 1. The observed separation of the main spots is well described by the escape to the solar surface of the magnetic field in the form of a rope, the upper half of which has the form of a semicircle or a semi-ellipse. This result indicates the ascent of the field from the subphotospheric layer. 2. The ascent rate of the magnetic rope is constant and, in a spot group with a total area of 300--1100.10^{-6} solar area, depends slightly on the loop dimensions and branch length of the spot area growth. The average ascent rate of the rope to the level of the photosphere is 115 ± 30 m/sec. 3. The width of the rope also increases

Card 1/2 UDC: 523.74

L 04288-67

ACC NR: AR6004673

with an increase of the rope dimensions, i.e., on the average the stronger spot groups create in the photosphere the wider magnetic field loops. Bibliography of 6 citations. M. Klyakotko [Translation of abstract]

SUB CODE: 03

Card 2/2

L 45134-66 EWT(1) GW

ACC NR: AR6015220 SOURCE CODE: UR/0269/65/000/012/0055/0056

AUTHOR: Vitinskiy, Yu. I.

30
B

ORG: none

TITLE: Some peculiarities of solar activity centers

SOURCE: Ref. zh. Astronomiya, Abs. 12.51.423

REF SOURCE: Izv. Gl. astron. observ. v Pulkove, v. 24, no. 2, 1965, 49-59

TOPIC TAGS: sun, solar activity, sunspot, solar activity center, heliographic longitude, heliographic latitude, calcium flocculus

ABSTRACT: Peculiarities of solar activity centers are examined in their floccular stage of development according to characteristics of 50 centers chosen by the author in 1961 through the D' Azambuja method. It is shown that the distribution of centers along the heliographic longitude differs considerably from the occasional one. No dependence of the prolongation of the existence of centers from the heliographic latitude was found. Of the 64 groups of developing sunspots

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L 45134-66

ACC NR: AR6015220

examined, 3 types of curves of area expansion were found and it was established that the character of this expansion is determined by the value of the maximum area of the group and its class (by dynamic classification). It is found that the lifespan of the active center is primarily determined by flares of class 2 and 3 and only partly by the maximum area of the group and the maximum longitudinal extension of the calcium flocculi. It is shown that long-existing groups of spots are not a decisive factor for the appearance of a center of activity, but serve as one of the significant indications of its long existence. An effort to classify activity centers has been made. The bibliography contains 22 titles. [Translation of abstract] [GC]

SUB CODE: 03/

Card 2/2 ULR

L 26599-66 EWT(1) GW

ACC NR: AP6009622 SOURCE CODE: UR/3010/65/000/016/0060/0066

33
32
B

AUTHOR: Vitinskiy, Yu. I.

ORG: none

TITLE: Fundamental characteristics of minimum solar activity in 1964 and its expected peculiarities in 1965

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. Geofizicheskiy byulleten', no. 16, 1965, 60-66

TOPIC TAGS: solar cycle, solar chromosphere, solar corona, solar radio emission, solar activity, sunspot

ABSTRACT: The minimum of solar activity in the 20th cycle occurred in summer, 1964, but this minimum was not low and the expected solar activity in 1965 was increasing. The Wolf number characterizes sunspot activity. This number was available to the author only through July 1964; therefore, data obtained on sunspot numbers at other observatories had to be reduced to Zurich's data. The reduction must be considered an approximation because of the difference in data obtained in various observatories. Data of the Soviet Mountain Astronomical Station were reduced to Zurich's data using the reduction factor 0.81. Changes in the Wolf number during 1962, 1963, and 1964 are shown in Fig. 1.

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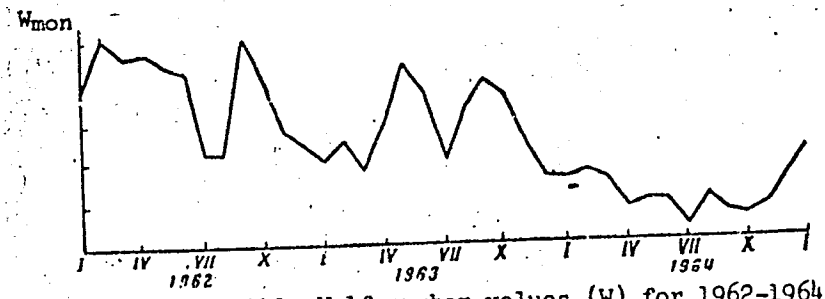

Fig. 1. Mean monthly Wolf number values (W) for 1962-1964

A comparison of the quarterly changes in Wolf numbers for the 19th, 3rd, and 17th solar activity cycles is given in Fig. 2. The years 1962, 1963, and 1964 are included at the end of the 19th cycle. The ends of the activity cycles taken show different Wolf numbers, but they demonstrate a general similarity. The southern hemisphere of the sun is less active than the northern hemisphere. The area of spot groups does not coincide in magnitude with the Wolf number, and the lifetime of spot groups varies from cycle to cycle. Cycles occur in which the lifetime of many groups covers two or more solar rotations, and there are also cycles containing sunspots with short lifetimes.

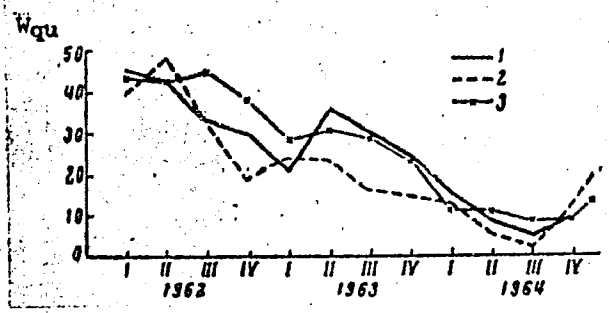

Fig. 2. Changes in quarterly Wolf numbers of the ends of three cycles

1 - 19th cycle; 2 - 3rd cycle; 3 - 17th cycle.

Other phenomena which are characteristic of solar activity are chromospheric calcium flocculi and hydrogen filaments. Calcium flocculi are characterized by their diurnal area, and hydrogen filaments by their number. Fig. 3 shows the activity of calcium flocculi and hydrogen filaments in 1963 and 1964. Both phenomena show a minimum in June—July 1964, which coincides with the formation of sunspots.

Chromospheric flares are characterized by the special indices I_A and I'_A. The latter is a reduced index which also includes the so-called subflares. The flare activity decreased in 1964, especially when large spots appeared in December.

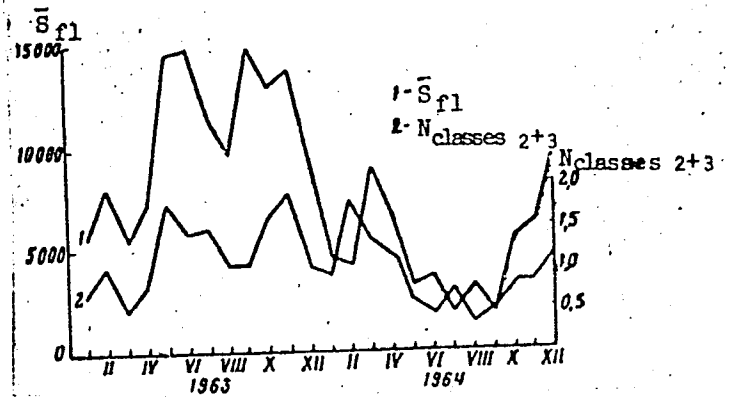

Fig. 3. Mean monthly area $\bar{S}_{fl}$ of calcium flocculi and mean monthly number of filaments N of classes 2 and 3 in 1963 and 1964

The activity of the solar corona is studied by variations of the green line and radio bursts on the meter wavelengths. The study of these phenomena was not performed systematically except at the Potsdam Astrophysical Observatory. Observation data of the Potsdam Observatory, obtained on the frequency of 234 Mc, were used for characterizing the activity of radio bursts in 1964. The minimum activity occurred in the third quarter of the year, and after this minimum, a sharp increase in activity was observed.

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L 26599-66
ACC NR: AP6009622

Investigations of the solar activity in 1964 showed a minimum in the third quarter of the year in all solar activities. However, the minimum in the Wolf number was an anomalous high and the number of sunspots was also large. Subsequently, the 20th cycle started to develop only in the northern hemisphere. Minima of solar activity are different in various cycles and the decrease in solar activity cannot be used as a basis for forecasting the following cycle. Although the Wolf number is considered to be a basis for forecasting solar activity, its cyclical variability excludes its strict use. The other forms of solar activity have no periodic rates, and they cannot be used for forecasts. Orig. art. has: 4 figures and 3 tables.
[ATD PRESS: 4218-F]

SUB CODE: 03 / SUBM DATE: none / OTH REF: 002

Card 5/5 BLG

ACC NR: AM6021850 Monograph UR/

Vitinskiy, YUriy Ivanovich

Morphology of solar activity (Morfologiya solnechnoy aktivnosti) Moscow, Izd-vo "Nauka," 1966. 198 p. illus., biblio. (At head of title: Akademiya nauk SSSR. Glavnaya astronomicheskaya observatoriya) 1300 copies printed.

TOPIC TAGS: solar activity, sunspot, chromospheric flare, corona, prominence, facula

PURPOSE AND COVERAGE: This booklet discusses the morphology of the active solar formations (sunspots, faculae, flares, prominences, coronal condensations) characterizing the general process involving all solar layers, usually called the center of activity. These formations are divided into two major groups already recognized in radio astronomy on the basis of the duration of the formation process, viz., the slowly and the rapidly changing components of solar activity. The physics involved in the various processes is only lightly touched. There are about 250 references.

TABLE OF CONTENTS:

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ACC NR: AM6021850

SUB CODE: 03/ SUBM DATE: 14Jan66/ ORIG REF: 152/ OTH REF: 261/

Card 2/2

ACC NR: AR6035551 SOURCE CODE: UR/0269/66/000/010/0060/0060

AUTHOR: Vitinskiy, Yu. I.

TITLE: Nature of changes in solar activity in individual latitudinal intervals

SOURCE: Ref. zh. Astronomiya, Abs. 10.51.431

REF SOURCE: Solnechnyye dannyye, no. 11, 1965 (1966), 62-66

TOPIC TAGS: solar activity, sunspot cycle, sunspot area

ABSTRACT: The peculiarities of the cyclic recurrence of solar activity (number of groups and the total area of spots) are studied for the various heliographic latitudes. Use was made of data from "Greenwich photo-heliographic results" for 1914--1953. The study of the results obtained which are presented in a table shows that: 1) both indexes detect quite clearly the 11-year cycle in all the latitudinal intervals. It is less evident in the interval of 0—5° of the northern hemisphere for a number of groups and intervals of 20—25° of the northern and 0—5° of the southern hemisphere for the total area. 2) A 20—21 year cycle is detected in the northern hemisphere. In the southern hemisphere it is less distinct, especially as

UDC: 523.74

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ACC NR: AR6035551

regards the total area. 3) The autocorellation coefficients are virtually always higher for sunspot groups than for the total area. To some degree, the asynchronism of the evolution of the 11-year cycle in the various latitudinal intervals is a manifestation of Shperer's law. The article includes a bibliography of 10 titles. T. Mandrykina. [Translation of abstract] [DW]

SUB CODE: 03/

Card 2/2

L 06316-67 EWT(1) GW
ACC NR: AR6016292 SOURCE CODE: UR/0269/66/000/001/0057/0057

AUTHORS: Vitinskiy, Yu. M.; Ikhsanov, R. N. 23 B

TITLE: Characteristics of the change of sunspot groups in their disintegration phase 12

SOURCE: Ref. zh. Astronomiya, Abs. 1.51.453

REF SOURCE: Solnechnyye dannyye, no. 12, 1964(1965), 63-71

TOPIC TAGS: sunspot, solar disturbance, solar magnetic field

ABSTRACT: On the basis of a study of the velocity of spot motion after their total area maximum, the author divides all spot groups into three types: I - the distance between the principal spots in the group decreases, II - the distance remains practically constant, III - the distance between the principal spots continues to increase. The spot area for all three types changes in roughly the same manner. A more detailed study of the separate groups leads to an analogous result. In the case of type I spot groups motion of a magnetic rope resembling a half-ring whose direction of motion is unknown occurs. In the case of type II the magnetic rope with parallel branches continues to ascend, and in the case of

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L 06316-67
ACC NR: AR6016292

type III the same occurs with the branches diverging after the group area maximum. The preliminary conclusion is made that the course of spot group development basically agrees with the hypothesis of the ascent of the magnetic field. Bibliography of 8 citations. T. Mandrykina [Translation of abstract]

SUB CODE: 03

Card 2/2 mlE

L 38503-66 EWT(1)/T IJP(c) AT
ACC NR: AR6019906 SOURCE CODE: UR/0275/66/000/002/B002/B002

AUTHOR: Kovarskiy, V. A.; Vitiu, Ye. V.

TITLE: The theory of generation-recombination fluctuations in semiconductors

SOURCE: Ref zh. Elektronika i yeye primeneniye, Abs. 2B15

REF SOURCE: Bul. Akad. Shtiintse RSS Mold., Izv. AN MoldSSR. Ser. fiz.-tekh. i matem. n., no. 12, 1964, 44-50

TOPIC TAGS: semiconductor, semiconductor carrier, noise generation, recombination noise, semiconductor noise

ABSTRACT: The authors develop a theory of the spectral density of generation-recombination noise in semiconductors in the case of a single-phonon mechanism of the capture of a charge carrier by an impurity center and the ejection of the charge carrier from the impurity center into the band. [Translation of abstract] [KP]

SUB CODE: 20/ SUBM DATE: none/

Card 1/1 pb

ACC NR: AT6024011 SOURCE CODE: UR/0000/65/000/000/0041/0056

AUTHOR: Vitiu, Ye. Y.; Kovarskiy, V. A.; Sinyavskiy, E. P.

ORG: none ?/

TITLE: Quantum kinetic equations for processes with multiphonon transitions. The Green's function method

SOURCE: AN MoldSSR. Institut prikladnoy fiziki. Teoreticheskiye i eksperimental'nyye issledovaniya fizicheskikh svoystv poluprovodnikovykh materialov i drugikh kristallov (Theoretical and experimental studies on physical properties of semiconductor materials and other crystals). Kishinev, Izd-vo Kartya Moldovenyaske, 1965, 41-56

TOPIC TAGS: quantum statistics, Green function, kinetic equation, recombination coefficient, carrier scattering

ABSTRACT: The purpose of the investigation was to develop the formalism of quantum kinetic equations in the variant using retarded and advanced Green's functions and thereby combine the statistical and quantum mechanical aspects of the calculations. The analysis is limited to static fields. The tensor of the electric conductivity in a static electric field is determined by the method of R. Kubo (Journ. Phys. Soc. Japan v. 12, 6, 570, 1957) in a variant in which the current correlation is expressed in terms of the retarded and advanced Green's functions. A system of integral quantum kinetic equations is derived, describing the scattering processes with account of the recombination mechanism of collision between the carriers and the impurities. One of

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ACC NR: AT6024011

the equations is the quantum analog of the Boltzmann equation, and the other describes processes of capture and emission of electrons by the local levels. By way of an example, the authors consider the recombination mechanism of impurity scattering, when the carrier lifetimes are comparable with the relaxation lifetimes determined by the ordinary scattering mechanisms. The recombination coefficient obtained as a result of the quantum-statistical calculation corresponds exactly to the estimates of the "non-Condon" approximation for the probability of nonradiative transition. The calculation shows that for experimental observation of the recombination scattering mechanism it is necessary to have a high concentration of ionized donors, and the donor degeneracy multiplicity should be high. At low temperatures the mobility determined by the recombination scattering mechanism should not depend on the temperature. The authors thank V. L. Bonch-Bruyevich, D. N. Zubarev, A. I. Kasiyan, and N. M. Plakida for valuable remarks made during various stages of this work. Orig. art. has: 65 formulas.

SUB CODE: 20/ SUBM DATE: 25Jul65/ ORIG REF: 011/ OTH REF: 006

Card 2/2

LITOVCHENKO, N.V.; VITIYEVSKIY, M.A.

Optimum diameter of wire rod for rod mills. Metallurg 7 no.10:34-35 O '62. (MIRA 15:9)

1. Magnitogorskiy gornometallurgicheskiy institut i Magnitogorskiy metallurgicheskiy kombinat.

(Wire drawing)

VITISHINSKIY, O.A.

Some data on the V.M. Molotov Engineering and Economics Institute in Leningrad. Trudy LIEI no.10:207-211 '55. (MLRA 9:8)

1. Uchenyy sekretar' Soveta instituta.
(Leningrad--Universities and colleges)

VITIVKER, V.S.

Significance of the phagotyping test in the study of staphylococcal intoxications. Vrach. delo no.6:100-101 Je'63. (MIRA 16:9)

1. Leningradskiy nauchno-issledovatel'skiy institut epidemiologii, mikrobiologii i gigiyeny.
(STAPHYLOCOCCAL DISEASE) (BACTERIOPHAGE)

IGNATOVICH, Z.A.; VITIVKER, V.S.

Role of Clostridium perfringens in the etiology of food poisoning. Vop. pit. 23 no.1:74-77 Ja-F '64. (MIRA 17:8)

1. Iz Nauchno-issledovatel'skogo instituta epidemiologii i mikrobiologii imeni Pastera, Leningrad.

L 4927-66 EWT(m)/EWP(j)/T/EWP(t)/EWT(b) IJP(c) JD/JG/RM

ACC NR: AP5026579 SOURCE CODE: UR/0073/65/031/010/1031/1035

AUTHOR: Kononenko, L.I. ; Melent'yeva, Ye. V. ; Vitjun, R. A.; Poluektov, N. S. 94 B

ORG: Odessa Laboratory, Institute of General and Inorganic Chemistry (Institut obshchey i neorganicheskoy khimii, Laboratorii v Odesse)

TITLE: Complexes of rare earth elements with acetylacetone and 1, 10-phenanthroline or 2, 2'-dipyridyl

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 31, no. 10, 1965, 1031-1035

TOPIC TAGS: yttrium compound, lanthanum compound, praseodymium compound, neodymium compound, samarium compound, europium compound, gadolinium compound, terbium compound, erbium compound, fluorescence spectrum

ABSTRACT: Ternary compounds formed by a rare earth metal with acetylacetone (AA) and phenanthroline (Phen) or dipyridyl (Dip) were synthesized fromY, La, Pr, Nd, Sm, Eu, Gd, Tb, and Er, and their composition and properties were studied. Chemical analyses showed that the ratio Me:Dip:AA is very close to 1:1:3. The probable structure of such ternary compounds with Eu and 2, 2'-dipyridyl may be represented as follows:

Card 1/2 UDC 541.49:546.65:535.372

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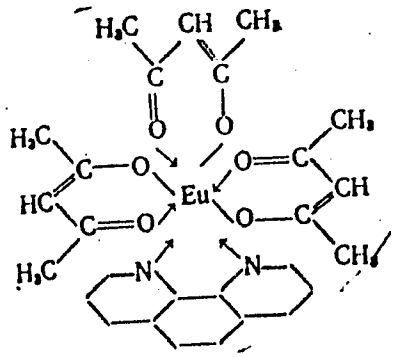
ACC NR: AP5026579



In connection with the use of rare earth β-diketonates in laser applications, the fluorescence characteristics of simple and ternary europium and terbium acetylacetonates are compared, and the spectra of the Eu^5D_0-$^7F_2$ and Tb^5D_4-$^7F_5$ bands are illustrated. It was found that the presence of acetylacetone in the molecule of the complex increases the fluorescence brightness of terbium and reduces the fluorescence of europium. The fluorescence spectra of the dipyridyl complexes are similar to those of the phenanthroline complexes. Orig. art. has: 4 figures and 1 table.

SUB CODE: IC / SUBM DATE: 09May64 / ORIG REF: 005 / OTH REF: 005

Card 2/2

VLASYUK, P.A., akademik; KOLOMIYETS, O.D. [Kolomiiets', O.D.]; VITKALENKO, L.P.

Effect of gamma irradiation of seeds on the extracts of cellular structures of sugar beet leaves. Dop. AN URSR no.5:678-682 '64. (MIRA 17:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut fiziologii rasteniy AN UkrSSR.

SHITOV, K.A., dotsent; VITKALOV, V.P., veterinarnyy vrach; SHCHERBAN', N.F., aspirant; DORONIN, N.N., doktor veterin. nauk

Testing BCG vaccine in tuberculosis of poultry. Veterinariia 41 no.2:41-43 F '65. (MIRA 18:3)

1. Voronezhskiy sel'skokhozyaystvennyy institut (for Shitov).
2. Rossoshanskoye proizvodstvennoye upravleniye (for Vitkalov).
3. Donskoy sel'skokhozyaystvennyy institut (for Shcherban', Doronin).

VITKAUSKAS, A.; MATUKONIS, A.

Relaxation stress changes in relieved threads of synthetic fibers. Khim. volok. no.6:56-59 '64.

(MIRA 18:1)

1. Kaunasskiy politekhnicheskiy institut.

VITKAUSKAS, I. P.

VITKAUSKAS, I. P. --"Effect of Oil Pressure in the Main Line on the Operating Ability of the D-35 Engine." *(Dissertations for Degrees in Science and Engineering Defended at USSR Higher Educational Institutions) Min of Higher Education USSR, Lithuanian Agricultural Acad, Kaunas, 1955

SO: Knizhnaya Letopis', No. 25, 18 Jun 55

* For Degree of Candidate in Technical Sciences

VITKAUSKAS, J., red.; ZVIRENAS, A., red.; SERKSNYS, J., red.; ADOMAVICIUS, B., red.; BARANAUSKAS, B., red.; PETRUSEVICIUS, V., red.; GLEVAVICIENE, S., red.

[Problems of the mechanization of agricultural production] Zemes ūio gamybos mechanizavimo klausimai. Vilnius, Leidykla "Mintis," 1964. 118 p. [In Lithuanian] (MIRA 18:2)

1. Lietuvos zemes ūkio mechanizacijos ir elektrifikacijos mokslinio tyrimo institutas.

VITKAUSKAS, J., red.; BARANAUSKAS, B., red.; SERKSNYS, J., red.; ZVIRENAS, A., red.; PETRUSEVICIUS, V., red.; ADOMAVICIUS, B., red.; KILAS, M., red.; SARKA, S., tekhn. red.

[Scientific and technical information] Mokslinė - techninė informacija. Vilnius, Valstybinė politinės ir mokslinės literaturos leidykla, 1961. 40 p. (MIRA 16:5)

1. Lietuvos zemes ukio mechanizacijos ir elektrifikacijos mokslinio tyrimo institutas.
(Lithuania--Agricultural machinery)

SAVUKYNAS, B.; VANAGAS, A.A; VITKAUSKAS, V.; VOSYLYTE, K.; ERMANYTE, I.; GRINAVECKIENE, E., otv. red.; SENKUS.J., red.; LUKOSEVICIUS, St., tekhn. red.

[Names of rivers and lakes of the Lithuanian S.S.R.] Lietuvos TSR uiu ir ezeru vardynas. Vilnius, Valstybine politines ir mokslines literaturos leidykla, 1963. 225 p. (MIRA 16:11)

1. Lietuvos TSR Mokslu Akademija. Vilna. Lietuviu kalbos ir literaturos institutas.
(Names, Geographical--Dictionaries)

VITKAUSKAS, Vytautas; ADOMAITIENE, V., red.; BALCIUNAS, L., tekhn. red.

[Work of a rural construction worker] Kaimo statybininko darbai. Vilnius, Lietuvos TSR Ministru Tarybos Valstybinio statybos ir architekturos reikalu komiteto Centrinis techninės informacijos ir propagandos biuras, 1961. 155 p. (MIRA 15:3)
(Farm buildings)

YANITSKIY, I.V. [Janickis, J.]; VITKENE, E.I. [Vitkiene, E.]

Electrodeposition of manganese-chromium alloys. Trudy AN Lit. SSR. Ser. B no.3:35-48 '65. (MIRA 19:1)

1. Kaunasskiy politekhnicheskiy institut i AN Litovskoy SSR.

STAKHANOV, T., tekhnik, Geroy Sotsialisticheskogo Truda; YERMAKOV, P.; MONAKHOV, N., brigadir stroitel'noy brigady; VITKENE, S., Geroy Sotsialisticheskogo Truda

Let's use progressive practices of the All-Union Agricultural Exhibition. Sel'stroi. 9 no.6:3-4 S '54. (MIRA 13:2)

1. Kolkhoz imeni Krasnykh partizan, Verkhne-Ural'skogo rayona, Chelyabinskoy oblasti (for Stakhanov). 2. Zamestitel' predsedatelya kolkhoza Lenina, Suzunskogo rayona, Novosibirskoy oblasti (for Yermakov). 3. Kolkhoz "Bol'shevik Leninskogo rayona, Moskovskoy oblasti (for Monakhov). 4. Zaveduyushchaya svinovodcheskoy fermoy kolkhoza "Geguzhes Pirmoyi," Pakruoyskogo rayona, Litovskoy SSR (for Vitkene).

(Moscow--Farm buildings--Exhibitions)

LAPINSKAS, V., kand.med.nauk; VITKENE, V. [Vitkiene, V.]

Activities of the Republic Scientific Society of Roentgenologists and Radiologists of the Lithuanian S.S.R. in 1963. Vest. rent. i rad. 39 no.6:83-84 N-D '64. (MIRA 18:6)

1. Predsedatel' Respublikanskogo nauchnogo obshchestva rentgenologov i radiologov Litovskoy SSR (for Lapinskas). 2. Sekretar' Respublikanskogo nauchnogo obshchestva rentgenologov i radiologov Litovskoy SSR (for Vitkene).

VITKEVICH, B.E., inzh.

Using templates of technological charts in drawing settings for machining parts on turret and automatic lathes. Mashinostroenie no.6:81 N-D '65. (MIRA 18:12)

VITKEVICH, N. D., Cand of Chem Sci — (diss) "Investigation in the Field of Benzimidazole Derivatives," Rostov-on-Don, 1959, 11 pp (Rostov State Univ; Chair of Organic Chemistry) (KL, 5-60, 123)

5 (3)

AUTHORS: Simonov, A. M., Vitkevich, N. D. SOV/79-29-7-67/83

TITLE: Investigations in the Field of Benzimidazole Derivatives (Issledovaniya v oblasti proizvodnykh benzimidazola). II. 1-(2',4'-Dinitro-phenyl)-benzimidazole and the Salts of 1-Methyl-3-(2',4'-dinitro-phenyl)-benzimidazolium (II. 1-(2',4'-Dinitrofenil)-benzimidazol i soli 1-metil-3-(2',4'-dinitrofenil)-benzimidazoliya)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2404 - 2409 (USSR)

ABSTRACT: The N-2,4-dinitro-phenyl derivatives of the compounds of the benzimidazole series have so far been unknown, apart from the 1-(2',4'-dinitro-phenyl)-2-methyl benzimidazole recently described (Ref 2), which induced the authors to synthesize and transform some representatives of this class and the resultant benzimidazolium salts. The 1-(2',4'-dinitro-phenyl)-benzimidazole was obtained by melting benzimidazole and 2,4-dinitro-chloro-benzene or by heating these components in alcohol solution in the presence of sodium acetate. Benzimidazole and its 2-methyl-substituted compounds easily yield the N-dinitro-phenyl derivatives when treated with 2,4-dinitro-chloro-benzene.

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Investigations in the Field of Benzimidazole Derivatives. SOV/79-29-7-67/83
II. 1-(2',4'-Dinitro-phenyl)-benzimidazole and the Salts
of 1-Methyl-3-(2',4'-dinitro-phenyl)-benzimidazolium

The 1-methyl-benzimidazoles react with 2,4-dinitro-chloro-benzene under the formation of the salts of 1-methyl-3-(2',4'-dinitro-phenyl)-benzimidazolium. Salts with the same cation can also be obtained on the basis of N-dinitro-phenyl-benzimidazole and its derivatives. The salts of 1-methyl-3-(2',4'-dinitro-phenyl)-benzimidazolium yield diphenyl-amine derivatives by separation of the dinitro-phenyl radical with aromatic amines. By treating these salts with alkaline reagents the imidazole ring opens and one of the isomeric acyclic amido-forms of the pseudo-base 2-(N-formyl-methyl-amino)-2',4'-dinitro-phenyl-amine is formed. The structure of the deformylation product was confirmed by the synthesis of compound (V) in another way. Thus, new evidence is presented for the existence of so-called pseudo-bases of benzimidazole salts in the acyclic form. There are 16 references, 6 of which are Soviet.

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

SUBMITTED: June 6, 1958

Card 2/2

SOV/79-29-8-35/81

5(3)
AUTHORS: Vitkevich, N. D., Simonov, A. M.

TITLE: Investigations in the Field of Benzimidazole Derivatives. III. Reaction of Compounds of the Benzimidazole Series With Nucleophilic Reactive Compounds

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2614-2617 (USSR)

ABSTRACT: The nucleophilic substitution in the benzimidazole series has so far been hardly investigated. A. M. Simonov and Uglov (Ref 1) found that the 5-methoxy-1-ethyl-benzimidazole (I), like the 5-methoxy-1-methyl derivative, is readily aminated when heated with sodium amide, and is converted into compound (II). The reaction takes place in dimethyl aniline with a 60% yield. The end product may also occur in the tautomeric form (III) which is of special interest. In contrast with the 1-alkyl derivatives of benzimidazole the latter cannot be aminated with sodium amide; the benzimidazole is first transformed into the salt-like compound (Ref 2), while an anion charge develops in the imidazole ring, so that the carbon atom in position 2 loses the capability of reacting with the second molecule of the compound. As is known, the N-alkyl- and N-phenyl-benzimidazole derivatives cannot be aminated by means of hydroxyl amine (Ref 4), as the latter is less nucleophilic than the sodium amide. On the assumption that

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the introduction of the aryl-sulfonyl group into the NH-group of the benzimidazole could increase the capability of the derivative obtained of nucleophilic substitution, the authors tried to aminate the 1-benzene-sulfonyl benzimidazole with hydroxyl amine. But it was possible to separate from the reaction mass only the benzene sulfonate of benzimidazole (Ref 5). The formation of the benzimidazole salt is a product of hydrolysis under the given conditions. Thus, the benzimidazole compounds cannot be aminated with an unsubstituted NH-group when treated with sodium amide. There are 1o references, 7 of which are Soviet.

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

SUBMITTED: July 1o, 1958

5.3610

77896
SOV/79-30-2-47/78

AUTHORS: Simonov, A. M., Vitkevich, N. D.

TITLE: Investigation of Benzimidazole Derivatives. IV. Compounds of 2-Aminobenzimidazole Series

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 590-592 (USSR)

ABSTRACT: This article deals with direct amination of benzimidazole nitro-derivatives and with properties of the resulting amino compounds. 1-Methyl- and 5-methoxy-1-γ-diethylaminopropyl)-benzimidazoles were treated with sodium amide and yielded 2-amino derivatives. Age of the sodium amide evidently does not affect the process. In the amino compounds of the benzimidazole series, the amino group has the same properties as in other heterocycles, where it is in α-position to the nitrogen hetero-atom. These properties result from sharp lowering of the electron density at the amino-group nitrogen atom caused by the nitrogen heteroatom. For this reason,

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Investigation of Benzimidazole Derivatives. IV. Compounds of 2-Aminobenzimidazole Series

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SOV/79-30-2-47/78

2-aminobenzimidazole and 2-amino derivatives of 1-alkylbenzimidazole, when treated with hydrochloric acid, form only monohydrochlorides and cannot be diazotized even when treated with nitrosylsulfuric acid. They do not react with 2,4-dinitrochlorobenzene in boiling alcoholic solution of sodium acetate. When they are treated with picryl chloride under these conditions, they yield picrates of the starting base and not the corresponding picryl derivatives, i.e., picryl chloride is hydrolyzed instead of reacting with the amino group. Strong acylating agents -- acid chloride of β-antraquinonesulfonic acid (in pyridine), p-nitrobenzoyl chloride (with sodium bicarbonate) and acetic anhydride easily convert amino compounds into acyl derivatives. Experiments conducted at N. F. Vaniyeva Rostov State Medical Institute, under the supervision of N. A. Gubareva, showed that 2-amino-1-methylbenzimidazole hydrochloride and the hydrochloride of its 5-methoxy derivative lower the

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Investigation of Benzimidazole Derivatives 77896
IV. Compounds of 2-Aminobenzimidazole Series SOV/79-30-2-47/78

blood pressure of animals. There are 8 references, 5 Soviet, 2 U.K., and 1 French. The U.K. references are: S. Angyal, C. Angyal, J. Chem. Soc., 1461 (1952); R. Feitelson, R. Rothstein, J. Chem. Soc., 2426 (1958).

ASSOCIATION: Rostov on-Don State University (Rostovskiy na-Donu gosudarstvennyy universitet)

SUBMITTED: February 23, 1959

Card 3/3

OSTRIKOV, M.S.; VITKEVICH, N.D.; SVIRSKAYA, O.D.

Kinetics of the increase of shrinkage stresses in systems undergoing drying. Koll. zhur. 23 no.1:122-124 Ja-F '61. (MIRA 17:2)

1. Rostovskiy gosudarstvennyy universitet.

VITKEVICH, N.D.; SIMONOV, A.M.

Benzimidazole derivatives. Part 7: Dual reactivity of 2-amino-1-methyl-benzimidazole. Zhur. ob. khim. 30 no.9:2868-2871 S '60. (MIRA 13:9)

1. Rostovskiy gosudarstvennyy universitet.
(Bensimidazole)

SIMONOV, A.M.; VITKEVICH, N.D.; MARTSOKHA, B.K.

Bensimidazole derivatives. Part 6: Action of sodium amide on 1-phenyl- and 1-benzylbenzimidazole. Zhur. ob. khim. 30 no.9:3062-3064 S '60. (MIRA 13:9)

1. Rostovskiy gosudarstvennyy universitet.
(Benzimidazole) (Sodium amide)

SIMONOV, A.M.; VITKEVICH, N.D.; ZHELTONOZHKO, S.Ya.

Derivatives of benzimidazole. Part 5:Action of bases on N-arylbenzimidazolium salts. Zhur.ob.khim. 30 no.8:2684-2688 Ag '60. (MIRA 13:8)

1. Rostovskiy gosudarstvennyy universitet.
(Benzimidazolium compounds)

L 04267-67 EWT(m)/T DJ

ACC NR: AP6013315 (A) SOURCE CODE: UR/0413/66/000/008/0134/0134

AUTHORS: Drong, I. I.; Pritsker, P. Ya.; Kustanovich, S. L.; Vakher, V. I.; Bogdanov, S. A.; Kaloyev, A. V.; Chichikov, G. L.; Stetsenko, V. V.; Vitkevich, V. B.

ORG: none

TITLE: Hydraulic amplifier for a steering mechanism of a machine on wheels. Class 63, No. 180965

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 134

TOPIC TAGS: hydraulic device, hydraulic equipment, hydraulic pressure amplifier, VEHICLE COMPONENT

ABSTRACT: This Author Certificate presents a hydraulic amplifier for a steering mechanism of a machine on wheels. The amplifier is built into the steering mechanism and is connected to the steering shaft. It contains a lead element in the form of a screw, a power cylinder (with its shaft connected to a spline attached to a sector of the steering mechanism), and a distributor. The latter consists of a casing fixed on the gear box of the steering mechanism. The casing contains ducts leading to the working interior of the power cylinder and to its pressure and outflow pipes. A cylindrical valve placed in the casing is located on the steering shaft, while two stops limit the axial displacement of the steering shaft. To provide for the indication of gauge reading of the automatic steering augmented by hand steering, a distributing sleeve (which slides in respect to the cylindrical valve and to the

UDC: 629.113-522.5

Card 1/2

L 04287-67

ACC NR: AP6013315

casing) is placed in the body of the distributor concentrically with the valve. The sleeve contains openings for passing of liquid and is motivated by plungers placed in the casing and connected to the gauge of automatic steering. These plungers interact with the face surfaces of washers contacting the sleeve. The washers serve as supports limiting the displacement of the sleeve in the casing (see Fig. 1).

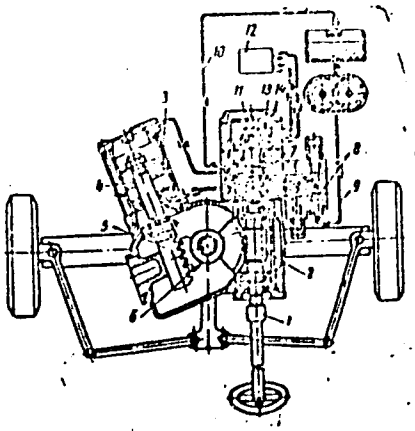

Fig. 1. 1 - steering shaft; 2 - screw; 3 - power cylinder; 4 - shaft of the power cylinder; 5 - spline; 6 - sector of the steering mechanism; 7 - distributor body; 8 - valves; 9 - pressure duct; 10 - overflow duct; 11 - cylindrical valve; 12 - automatic steering gauge; 13 - sliding sleeve; 14 - plungers

The working displacement of the sleeve (limited by the washers) is smaller than the working displacement of the valve. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 14Apr62

Card 2/2

VITKEVICH, V. I.

Meteorological Abst.
Vol. 4 No. 3
March 1953
Part 2
Bibliography on Frost
and Frost Forecasting

4C-266 ✓ 551.524.37(47):551.509.532

Vitkevich, V. I., Zamorozki i bor'ba s nimi. [Frost and its prevention.] *Sovetskaia Agronomiia.* Moscow. 4(5/6):26–34. May/June 1946. 5 figs., 2 tables. DLC—A brief review of radiative and advective frost phenomena. Some remarks on methods of frost forecasting by observations of air temperature, dew-point, cloudiness and winds, and a description of installations needed for these observations and for frost prevention. In the Moscow Region, late spring frost can be observed as late as the middle of June, and early autumn frosts recorded in the last days of August. *Subject Headings:* 1. Frost forecasting 2. Spring frosts 3. Autumn frosts 4. Moscow Region, U.S.S.R.

1. VITKEVICH. V. I.

2. USSR (600)

"The Agrometeorological Observatory in Yushnyy (Mshatka), Its Structure, and Its Scientific Work." Doklady moskovsky sel' skokhozyaystvennoy akademii imeni Timiryasev, Issur 7, 1948 (52-54)

9. Meteorologiya i Gidrologiya, No. 3, 1949. [redacted] Report U-2551. 30 Oct 52

VITKEVICH, V. I.

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SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

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SO: U-5240, 17, Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

VITKEVICH, V.I.

Meteorological Abst.
Vol. 4 No. 10
October 1953
Part 1
Meteorological
Observations and
Instruments

4.10–55

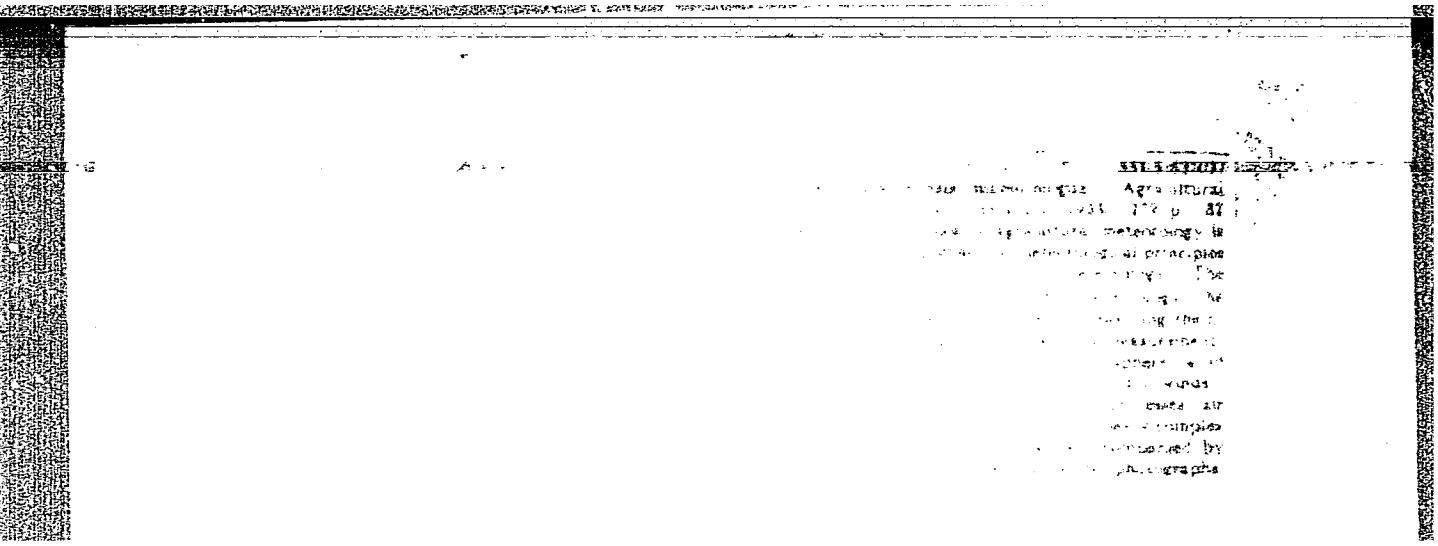
551.508:551.43

Vitkevich, V. I. (*Moscow*). **Novye pribory dlia issledovaniia prizemnogo sloia vozdukha.** [New instruments for investigating the atmospheric layer near the ground.] *Priroda*, Moscow, 9:94–98, Sept. 1952. 8 figs. DLC. Hungarian transl. by Galléri, Sándor in *Időjárás*, 56(11/12):356–362, 1952.—Both the Stevenson screen and most of the instruments and methods of meteorological observatories are designed for conditions of free ventilation; hence, for agrometeorological investigations specially designed instruments are needed since there is no free ventilation at the level of plant growth. Detailed descriptions and photographs are given of special apparatus for measuring air temperature and relative humidity by means of phytopsychrometer and psychrothermograph provided with a signalling device for signalling the occurrence of a given air temperature; of special cylinders inserted into the soil for measuring soil evaporation and a special device provided with a balance for continuous recording of evaporation from the soil surface; of three types of apparatus for measuring soil temperature (for summer and winter and for the continuous recording of soil temperature); of a special rain gauge for measuring precipitation and continuous recording of wind velocity within the plant cover. *Subject Headings:* 1. Micrometeorological instruments 2. Galléri, Sándor.—*I.L.D.*

Moscow Agric. Acad. im. K.A. Timiryazev

VITKEVICH, V.I., professor.

The sun and increasing productivity. Nauka i zhizn' 21 no.4:21-22 Ap '54. (MLRA 7:5)
(Plants, Effect of light on)



VITKEVICH, V.I., prof., doktor nauk.

Basic principles of organizing agrometeorological stations. Dokl. TSKhA no.28:58-63 '57. (MIRA 11:4)
(Meteorology, Agricultural)

[redacted], prof., doktor fiziko-matematicheskikh nauk

Determining the evaporation from soil surface [with summary in English]. Izv. TSKhA no.5:237-250 '58. (MIRA 11:11)
(Soil moisture) (Evaporation)

VITKEVICH, V.I., doktor fiziko-matemat.nauk, prof.

Agricultural meteorolgy at the Timiriazev Agricultural Academy in 1917-1957. Izv.TSKhA no.2:165-180 '59. (MIRA 12:8)
(Meteorology, Agricultural)

VITKEVICH, V.I., prof.; OZEROV, V.N., red.

[Fundamentals of agricultural meteorology] Osnovy sel'skokhoziaistvennoi meteorologii. Izd.2. Moskva, Izd-vo "Kolos," 1964. 303 p. (MIRA 17:5)

VITKEVICH, V.I., prof.; OZEROV, V.N., red.

[Fundamentals of agricultural meteorology] Osnovy sel'skokhoziaistvennoi meteorologii. Izd.2. Moskva, Izd-vo "Kolos," 1964. 303 p. (MIRA 17:5)

VITKEVICH, V.I.; SAMBIKIN, M.M., prof., retsenzent; CHUBUKOV, L.A., prof., retsenzent; GRIGOR'YEVA, A.I., red.; SOKOLOVA, N.N., tekhn. red.

[Practical work in agricultural meteorology] Prakticheskie zaniatiia po sel'skokhoziaistvennoi meteorologii. 2., perer. i dop. izd. Moskva, Sel'khozizdat, 1962. 319 p. (MIRA 16:6)
(Meteorology, Agricultural)

VITKEVICH, Vitaliy Ignar'yevich; PLESHKOV, B.I., red.; ZUBRILINA, Z.P., tekhn.red.; FEDOTOVA, A.F., tekhn.red.

[Prakticheskie zaniatiia po meteorologii. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1957. 205 p. (MIRA 10:12)
(Meteorology)

VITKEVICH, V.I.; SAMBIKIN, M.M., prof., retsenzent; CHUBUKOV, L.A., prof., retsenzent; GRIGOR'YEVA, A.I., red.; SOKOLOVA, N.N., tekhn. red.

[Practical work in agricultural meteorology]Prakticheskie zaniatiia po sel'skokhoziaistvennoi meteorologii. 2., perer. i dop. izd. Moskva, Sel'khozizdat, 1962. 318 p. (MIRA 15:9)
(Meteorology, Agricultural)

VITKEVICH, Vitol'd Ignat'yevich, prof., doktor fiziko-matem.nauk;
CHELYSHKIN, Yu.G., red.; PEVZNER, V.I., tekhn.red.

[Agricultural meteorology] Sel'skokhoziaistvennaia meteorologiia.
Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 471 p.
(MIRA 14:1)

(Meteorology, Agricultural)

VISNEVSKIJ, A. A.; BYCHOVSKIJ, M. L.; CHARNAS, S. S.

On the possible use of computing machines for diagnostic purposes.
Cas.lek.cesk 100 no.13:385-389 31 Mr '61.

1. Ustav chirurgie Visnevskeho A.L.V. SSSR.

(AUTOMATIC DATA PROCESSING) (DIAGNOSIS)

L 1892-66 EWT(1)/FBD GS/GW/WS-2

ACCESSION NR: AT5022826 UR/0000/65/000/000/0060/0062

AUTHOR: Vitkevich, V. V.

TITLE: Predominantly radial magnetic field in the space about the sun

SOURCE: Vsesoyuznoye soveshchaniye po kosmofizicheskomu napravleniyu issledovaniy kosmicheskikh luchey. 1st, Yakutsk, 1962. Kosmicheskiye luchi i problemy kosmofiziki (Cosmic rays and problems in cosmophysics); trudy soveshchaniya. Novosibirsk, Redizdat Sib. otd. AN SSSR, 1965, 60-62

TOPIC TAGS: solar magnetic field, solar radio emission, solar corona, electromagnetic wave interference

ABSTRACT: The author earlier observed (V. V. Vitkevich, Dokl. AN SSSR, 77, No. 4, 1951) that one of the discrete sources of radio emission, the Crab Nebula, becomes covered with a corona every year. The smallest distance between the center of the sun and the source every June 15 is 4.5 $R_\odot$. The idea of separating radio waves coming from the source against a background of the more powerful solar radio emission is based on a radio interference technique and was used to study the space about the sun. It was found that the solar supercorona does not damp radio waves, but scatters them. Hence, the space about the sun has an inhomogeneous structure in the form of electron (plasma) formations. The inhomo-

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ACCESSION NR: AT5022826

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geneities were shown to be stretched and roughly radial, and the magnetic field in the space about the sun is also largely radial. This field prevents the scattering of the radial electron inhomogeneities. The plasmas in the corona distort the magnetic field, transforming it from a "dipole" field to a radial one. Deviations from the "quiescent" picture in the supercorona are discussed. The radial character of the magnetic field established by radioastronomical observations is very essential for an understanding of the physical processes in the space about the sun; in particular, the radial magnetic field affects the dynamics of cosmic rays of both solar and galactic origin.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva (Physics Institute)

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SUBMITTED: 29Oct64 ENCL: 00 SUB CODE: AA

NO REF SOV: 006 OTHER: 000

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2/2

VITKEVICH, V.V.; KALACHEV, P.D.

Fundamentals of the construction of a cross-shaped band radio telescope of the Physics Institute of the Academy of Sciences. Trudy Fiz. inst. 28:5-13 '65. (MIRA 18:7)

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A parabolic reflector with screens. Ibid.:46-50 (MIRA 18:7)

VITKEVICH, V. V.

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Chair, Physical Oscillations, NIIF, Moscow State Univ.

VITKEVICH, V. V.

"Synchronization of Relaxation Generators," II, Zhur. Tekh. Fiz. 15, No. 11, 1945.

VITKEVICH, V. V.

"Geometric Theory of the Synchronization of relaxation Generators," III, Zhur. Tekh. Fiz. 15, No. 11, 1945.

VITKEVICH, V. V.

PA 19T8

USSR/Interference, Electrical
Radio interference

May 1946

"Atmospheric Radio Interference and Its Study," V. V. Vitkevich, Candidate of Physico-mathematical Sciences, 15 pp

"Radiotekhnika" Vol I, No 2

Discussion of general trends in the investigation of atmospherics and a summary of methods for their measurement in the USSR and other countries, with considerations on the design of special measuring equipment and on methods of measuring atmospherics in a wide frequency range. Based on Russian, American, British and German sources.

19T8

VITKEVICH, V. V. PA 19T13

USSR/Antennas - Design Jun/Jul 1946
Antennas - Marine

"Model Antennae Experiments," V. V. Vitkevich, Candidate of Physico-Mathematical Sciences, 9 pp

"Radiotekhnika" Vol I, No 3/4

The use of antennae models for research and teaching purposes, and a description of a model suitable for the investigation of problems connected with ship antennae.

19T13

VITKEVICH, V. V.

USSR/Oscillators - Relaxation Mar 1946
Mathematics, Applied

"'Hard' Condition of Self-excitation of the Relaxation Oscillator (Multi-vibrator of Abraham-Bloch)," V. V. Vitkevich, 5 pp

"Zhur Tekh Fiz" Vol XVI, No 3

Solution of simultaneous differential equations describing coupled influence, with graphs.

12799

USSR/Mathematics, Applied Mar 1946
Spectra

"The Frequency Spectrum of Nonperiodic Functions," V. V. Vitkevich, 4 pp

"Zhur Tekh Fiz" Vol XVI, No 3

Mathematical discussion of nonperiodic functions:

$$M(t) = \frac{1}{2\pi}\int_{-\infty}^{+\infty}\int_{-\infty}^{+\infty} M(x)\exp(-i\omega x)\cdot\exp(i\omega t)\,dx\,dt$$

with expansion into series.

12T101

BCS

glass

1233. The use of scraper installations in the glass industry.—L. I. VITKEVICH (*Stek. Keram.*, 8, No. 10, 11, 1951). Loading and unloading raw materials. (13 figs.)

VITKEVICH, V. V.

USSR/Electricity May/Jun 49
Synchronization

"Synchronization of Discontinuous (Relaxation) Auto-Oscillations at a Fundamental Frequency and at Harmonics of an External EMF," V. V. Vitkevich, Cand Tech Sci, 2 pp

"Radiotekh" Vol IV, No 3

Discusses synchronization of single-kick and symmetric auto-oscillations for both a relaxation voltage oscillator having a nonlinear element type N and a relaxation current oscillator having a nonlinear element type S. Considers most

52/49T30

USSR/Electricity (Contd) May/Jun 49

general case when, along with external emf directly introduced in oscillator circuit, periodic sinusoidal harmonics act on critical current (voltage) values of the nonlinear element S (N) at which current (voltage) kicks occur. Submitted 22 Feb 49.

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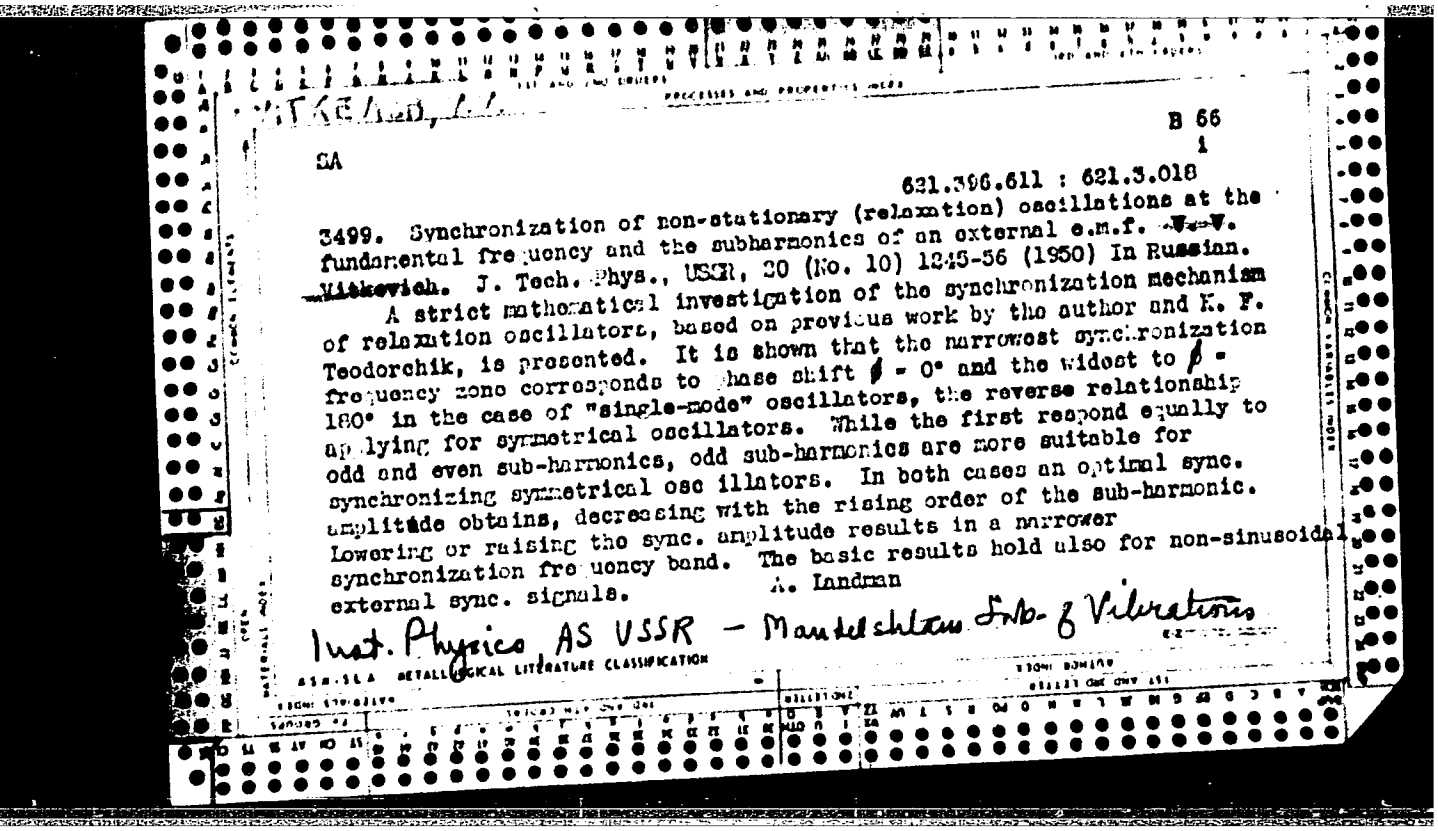

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SA

621.396.611 : 621.3.018

3499. Synchronization of non-stationary (relaxation) oscillations at the fundamental frequency and the subharmonics of an external e.m.f. V-V. Vitkevich. J. Tech. Phys., USSR, 20 (No. 10) 1245-56 (1950) In Russian.

A strict mathematical investigation of the synchronization mechanism of relaxation oscillators, based on previous work by the author and K. F. Teodorchik, is presented. It is shown that the narrowest synchronization frequency zone corresponds to phase shift $\phi = 0°$ and the widest to $\phi = 180°$ in the case of "single-mode" oscillators, the reverse relationship applying for symmetrical oscillators. While the first respond equally to odd and even sub-harmonics, odd sub-harmonics are more suitable for synchronizing symmetrical oscillators. In both cases an optimal sync. amplitude obtains, decreasing with the rising order of the sub-harmonic. Lowering or raising the sync. amplitude results in a narrower synchronization frequency band. The basic results hold also for non-sinusoidal external sync. signals.

A. Landman

Inst. Physics AS USSR - Mandelshtam Lab. of Vibrations

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VITKEVICH, V. V.

523.755

8458. A new method of investigating the solar corona. V. V. Vitkevich. *Dokl. Akad. Nauk, SSSR*, 77 (No. 4) 585–8 (1951) *In Russian.*

The method suggested consists in systematic and coordinated observations of radio-brightness and temperature on several wavelengths in the dm and m band by interference methods with extended aerials at various bases. This should yield results concerning the altitude distribution of electron concentration and temperature in the corona. Interference observation from distributed bases with left and right polarized waves would be an appropriate active method of investigation of the magnetic field of the whole corona and the individual sections, whereas another, passive, method would be the observation of its translucence for "signals" from radio-stars. A theory of the last method is outlined. B. P. KRAUS

astrophysics

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VITKEVICH, V. V. and B. M. CHIKHACHEV

"Observation of Solar Radio Emissions in the Meter Wave Band During the Total Solar Eclipse of February 25, 1952"

(Total Eclipse of the Sun, February 25, 1952 and June 30, 1954, Transactions of the Expedition to Observe Solar Eclipses) Moscow, Izd-vo AN SSSR, 1956. 357 p.

VI"KEVICH, V. V.

USSR/Astronomy - Radio Emission Jan/Feb 52

"Measurement of Intensity of Radio Emission of Cosmic Sources," V. V. Vitkevich, Phys Inst imeni Lebedev, Acad Sci USSR

"Astron Zhur" Vol XXIX, No 1, pp 14-24

Reviews American and French literature on subject with enclosure of schematic diagrams of Dieke's radiometer (cf. Rev Sci Instr 17, 17, 1946) and tables. Received 6 Jun 51.

202T3

VITKEVICH, V. V.

"Interference Method in Radioastronomy," Journal of Astronomy, Vol. 29, No. 4, Jul-August 1952, pp. 381-515.

USSR/Astronomy - Radio Emission Jul/Aug 52

"Interference Method in Radioastronomy," V.V. Vitkevich, Phys Inst imeni Lebedev, Acad Sci USSR

"Astron Zhur" Vol 29, No 4, pp 450-462

The radio-wave interference pattern was analyzed after its passage through the solar corona. The magnitude of the shift, the article states, could indicate the refraction by the corona and consequently give some informations on the refraction index and the electron density of the corona.

226T44

Also states that observations by a polarizing interferometer could reveal data on the magnetic field of the corona. Indebted to S. Ye. Khaikin and B. M. Chikhayev. Received 17 Feb 52.

226T44

VITKEVICH, V. V.

VITKEVICH, V. V. PA 234T68

USSR/Astronomy - Radio-Emitting Stars 1 Sep 52

"An Experimental Method for Determining the Coordinates of the Outbursts of Radio Emission," V. V. Vitkevich

"Dok Ak Nauk SSSR" Vol 86, No 1, pp 39-42

Describes typical "2-humped" curve of outburst, possible explanation of the formation of straight wave and echo wave, skeletal scheme of subject detn, subject method, and its sensitivity. Method consists of an ordinary interference system of 2 antennas. Submitted by Acad M. A. Leontovich 14 Jul 52.

234T68

USSR/Astronomy - Galaxy Radio Emission Sep/Oct 52

"Experimental Possibilities of Observation of Monochromatic Radio Emission From the Galaxy (Report at Colloquium of Oscillations Laboratory, Physical Institute imeni Lebedev, Academy of Sciences USSR)," V. V. Vitkevich, Phys Inst imeni Lebedev, Acad Sci USSR

"Astron Zhur" Vol 29, No 5, pp 532-537

Describes new system of radio receivers of monochromatic radio emission from the galaxy. Suggests use of frequency modulated radio meters. For computation of a sensitive circuit, suggests time const of the order of several tens of minutes. Communications by Western scientists (cf. H. I. Ewen, E. M. Purcell, Nature, 168, 356, No 4270, 1951; C. A. Muller, H. O. Ort, Nature, 168, 357, No 4270, 1951) were received after the article was in print.

234T57

VITKEVICH, V. V.

234T57

VITKEVICH, V. V.

USSR/Astronomy - Radio Astronomy Nov/Dec 53

"Interference Radio Telescope," V.V. Vitkevich and R.L. Sorochenko, Phys Inst im Lebedev, Acad Sci USSR

Astron Zhur, Vol 30, No 6, pp 631-635

Discusses an antenna system consisting of a series of separate antennas of small dimensions and coupled electrically. He compares this diagram of radio reception to optic interference pattern by a diffraction grid. Considers this system as more advantageous than others. Rec 20 Apr 53.

273T75

VITKEVICH, V.V.

USSR/Astronomy - Radio Astronomy 21 Aug 53

"Wide-Band Radio-Interferometer," V. V. Vitkevich

DAN SSSR, Vol 91, No 6, pp 1301-1303

States that one of the most important conditions for the development of radio-astronomy is the creation of radio-telescope with great resolving capacity. The increase in area of radio-receiver antennas leads to decrease in the angle of opening of the main maximum of the radio-receiver diagram; interferometers with both two and many antennas give the greatest possibilities in this direction.

275T56

Considers the quantitative side of this problem following his earlier work (Astron Zhurnal, 29, No 4, 1952). Finds that 4 antennas can completely ensure the "knife" diagram of the radio-receiver. Presented by Acad M. A. Leontovich 1 Jul 53.

VITKEVICH, V. V. Physical Inst., AS USSR

"Disturbed Radioemission from the Sun as the Sum of Small Monochromatic Peaks," and "Results of Observations of the Scattering of Radiowaves on the Electronic Inhomogeneities in the Solar Corona," papers submitted at the International Astronomical Union Radio Astronomy Symposium, Jodrell Bank, UK, August 1955

A- 40421 - II

VITKEVICH, V V

USSR/ Astronomy

Card 1/

Authors : Mustel', E. R. Memb. Corresp. of Acad. of Sc. USSR., and Vitkevich V. V.

Title : The physics of the sun

Periodical :

Abstract : The preliminary results obtained by studying the

Submitted :

VITKEVICH, V.V.

USSR/Astronomy - Solar radio-radiation

Card 1/1 Pub. 22 - 9/51

Authors : Vitkevich, V. V.

Title : The monochromatic character of solar radio-radiation peaks

Periodical : Dok. AN SSSR 101/2, 229-231, Mar 11, 1955

Abstract : A method is described for observation, intensity evaluation and frequency band width determination of solar radio-radiation peaks. Dependence of the peak intensities on the solar spot activities is discussed. One French reference (1953). Graphs

Institution: The Academy of Sciences of the USSR, the P. N. Lebedev Institute of Physics

Presented by: Academician N. A. Leonlovich, November 12, 1954