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RAUTENSHTEYN, Ya.1.; FADEYEVA, N.P.

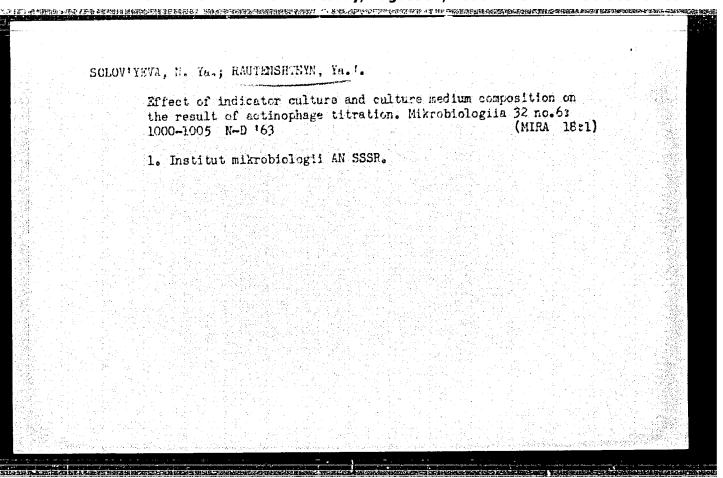
Lysogenic conversions of citrate resistance in Actinomyces venezuolae, Dckl. AN SSSR 161 no.5:1441-1443 Ap '65. (MIRA 18:5)

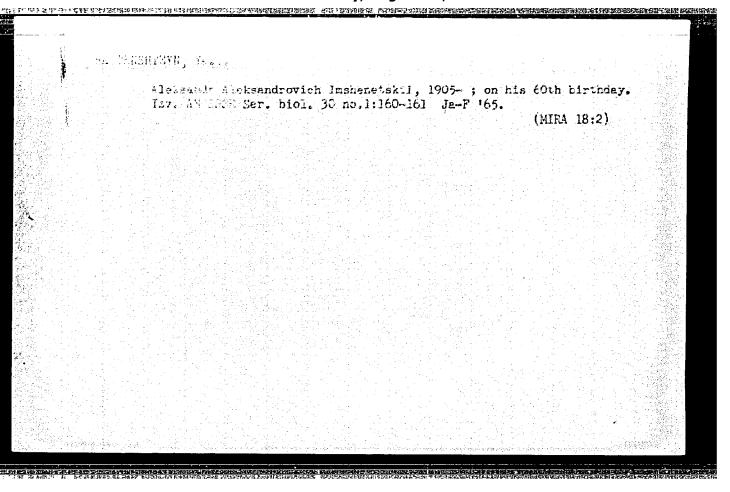
1. Institut mikrobiologii AN SSSR. Submitted July 28, 1964.

RAUTENSHTEYH, Ya.I.; MISYUREVA, N.G.; KHACHATRYAN, L.S.

Lysogenicity of Bac. cereus var. Galleriae cultures and the characteristics of phages contained in them. Mikrobiologiia 33 no.6:980-986 N-D 464. (MIRA 18:4)

1. Institut mikrobiologii AN SSSR, Moskovskiy zavod bakterial'nykh preparatov i Institut mikrobiologii AN Armyanskoy SSR.





ACCESSION NR: AP4022476

s/0220/64/033/001/0056/0063

AUTHOR: Misyureva, N. G.; Rautenshteyn, Ya. I.

TITLE: Occurrence of Bac. megaterium bacteriophages in certain soils

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SOURCE: Mikrobiologiya, v. 33, no. 1, 1964, 56-63

TOPIC TAGS: Bac. megaterium var. phosphaticum, Bac. megaterium bacteriophage, phagolysis, lytic action spectrum, soil isolated bacteriophage, industrial culture bacteriophage, Bac. megaterium culture sensitivity

ABSTRACT: This study was prompted by the problem of phagolysis occurring in industrial fertilizer bacterial preparations, based on Bac, megaterium cultures, at the First Moscow Plant of Bacterial Preparations. Twenty soil samples taken from areas adjacent (10 to, 500 m) to the plant were investigated to determine the number of bacteriophages active against Bac, megaterium and their lytic activity. Each soil suspension sample was introduced into two flasks filled with 100 ml of a corn-molasses medium. One of the flasks was thoroughly shaken and then was let stand for 15 to 20 min at room

Card 1/3

ACCESSION NR: AP4022476

是主要和政治的程序,如此是正式的影响。 第一章

temperature (180) to find free phage particles. The other flask was kept on a rocker for 24 hrs to produce favorable conditions for bacteriophage reproduction on Bac. megaterium cultures present in the soil. A filtrate was propared from the contents of each flask and several drops were applied to test culture growths of various Bac. mogaterium strains in cups containing an agar and a corn-molasses medium. Presence of bacteriophages in test cultures was determined by absence of growth in sections where filtrate was applied. Results for the soil samples showed they contained a significant number of bacteriophages active against Bac. megaterium, especially the samples of soil closest to the plant. Bac. megaterium bacteriophages isolated from the soil samples proved to be highly heterogeneous in their lytic action spectra. Bacteriophages with different lytic action spectra can be found in the same soil sample. Soil isolated bacteriophages have different lytic action spectra than bacteriophages isolated from industrial cultures. Industrial cultures of Bac. megaterium var. phosphaticum vary in their sensitivity to bacteriophages isolated from soil and industrial cultures. Orig. art. has: 4 tables.

Card : 2/3

ACCESSION NR: AP4022476			
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SUBMITTED: 09Apr63	DATE ACQ: 09Apr64		ENCL: 00
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ard 3/3			

	Comparative study of the effect of specific actinophages of different virulence on Actinomyces erythreus. Mikrobiologiia 32 no.4:642-649 J1-Ag '63. (MIRA 17:6)
	1. Institut mikrobiologii AN SSSR.
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	의 교통 마음 프로그램, 영화 중국을 가져 있었다면 하는데 이 등을 받는데 함께 들어 되었다. 그는데 하는데 이 사람들은 다른데 되었다. 이 교통은 마음 사람들은 사람들은 사람들은 사람들은 이 등을 받는데 보고 있는데 이 등을 보고 있다.
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KHAVINA, E.S.; RAUTENSHTEYN, Ya.I.; ASEM KHUSEYN.

Lysogenesis among the cultures of the Actinomyces viridochromogenes group. Mikrobiologiia 32 no.3:471-478 My-Je*63 (MIRA 17:3)

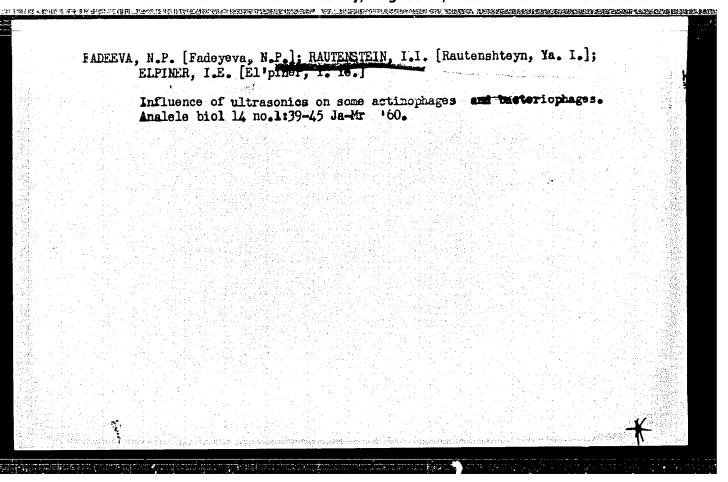
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1. Institut mikrobiologii AN SSSR i Biologo-pochvennyy fakul - tet Moskovskogo gosudarstvennogo universiteta imeni Lomonosova.

KHAVINA, E.S.; RAUTENSHTEYN, Ya.I.

Bacteriophage against cultures of bacteria from the genus Caulobacter. Dokl. AN SSSR 153 no.1:197-199 N '63, (MIRA 17:1)

1. Institut mikrobiologii AN SSSR. Predstavleno akademikom A.A. Imshenetskim.



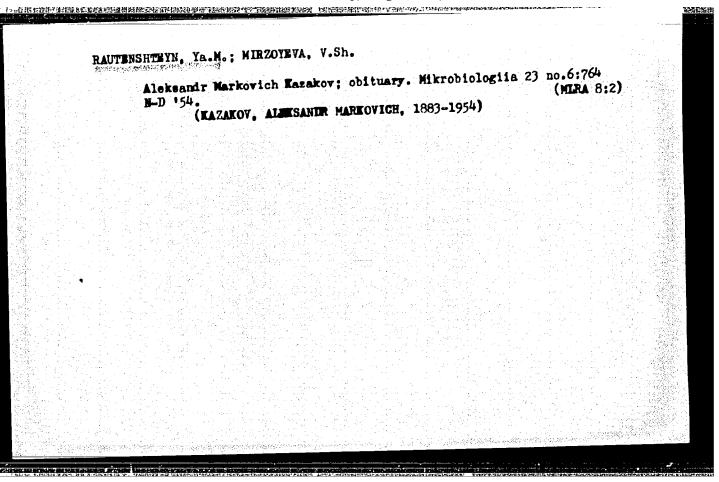
SOLOV'YEVA, N.Ya.; KRIVISKIY, A.S.; RAUNTENSHTEYN, Ya.I.

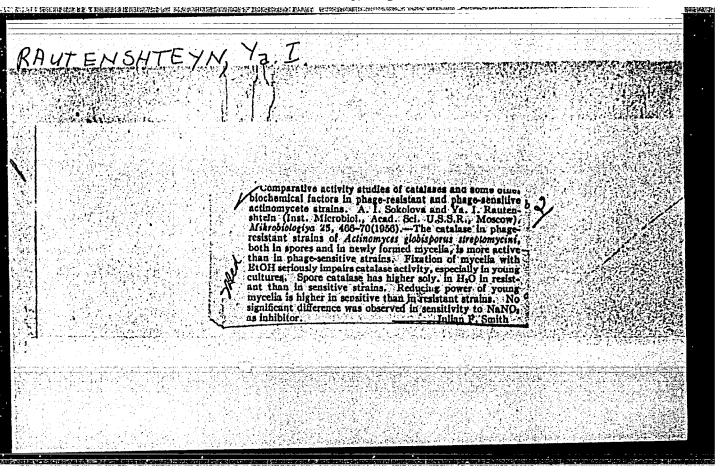
Comparative study of some bacteriophages of Bac. megatherium.
Mikrobiologiia 30 no.2:255-260 Mr-Ap '61. (HIRA 12:6)

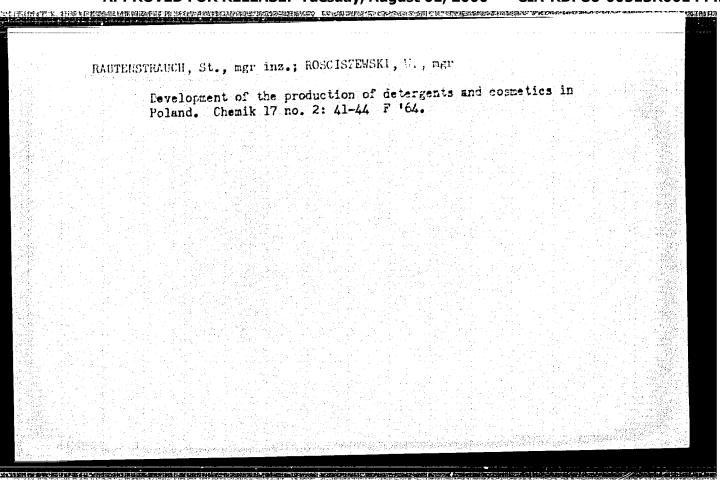
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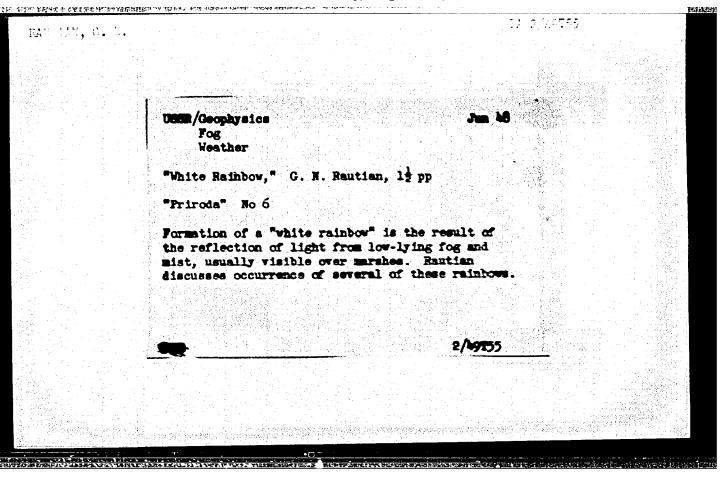
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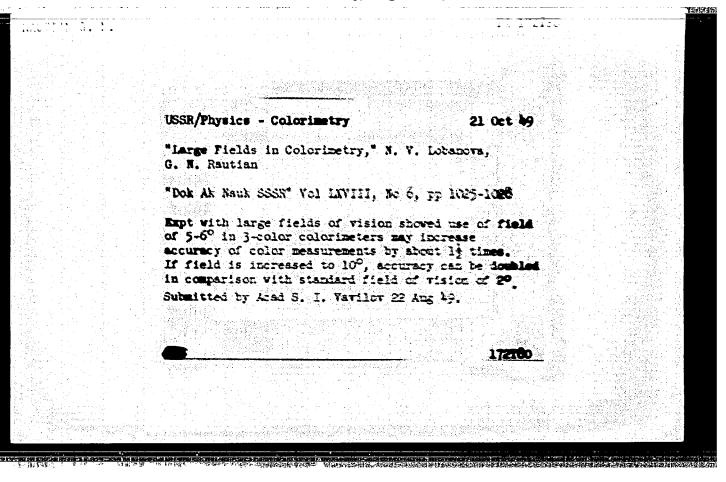
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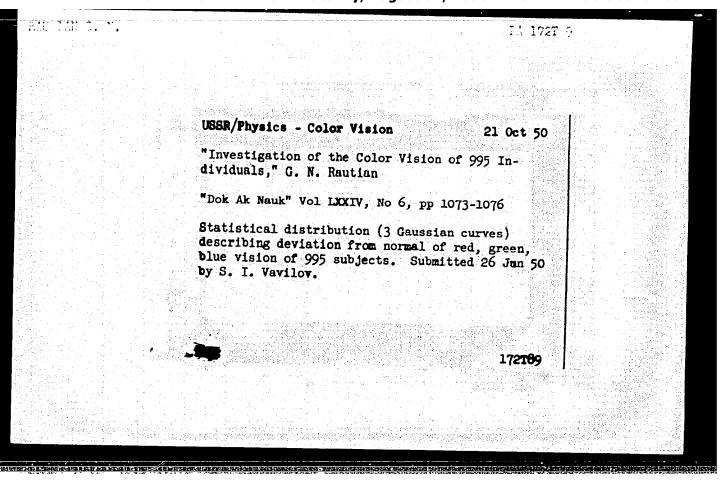
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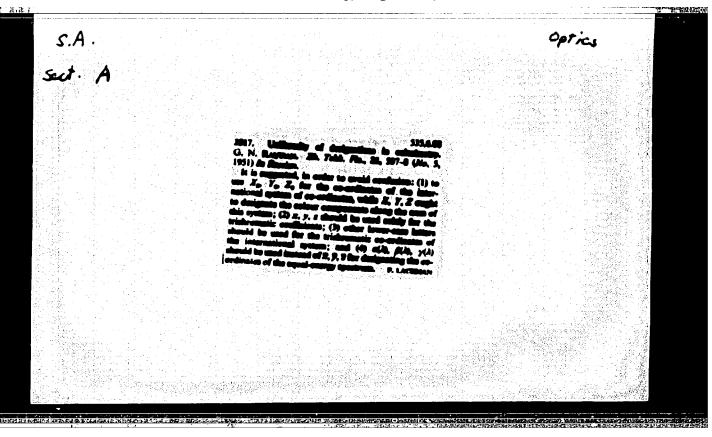
Small Fields in Golorimetry*

Dok. AN, 66, No 5, 19h9



RAUTIAN, G. N. 1667101 USSR/Physics - Instruments, Optical 1 Jul 50 "A New Anomaloscope," G. N. Rautian, State Opt Inst "Dok Ak Nauk SSSR" Vol LXXIII, No 1, pp 99-102 Describes principle of new anomaloscope which tests separately sensitivity of each of three Young eye receptors by gradually varying action on one receptor while action on other two is kept constant. Testing is by varying color of one of two half-fields juxtaposed in instrument. Submitted 8 May 50 by Acad S. I. Vavilov. 1667101 Control of the contro





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RAUTIAN, G. II.

Relation of the Weber-Fechner's law to color-sensitive receptors of the eye. Doklady Akad. nauk SSSR 79 no.1:65-68 1 July 1951. (CIML 21:1)

1. Presented 3 May 1951 by Academician A. II. Terenin.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

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RAUTIAN. G. N.	
	USSR/Physics - Light Filters Apr 52
	"Monochromatic Light Filters," N.I. Speranskaya, G.N. Rautian
	"Zhur Tekh Fiz" Vol XXII, No 4, pp 620-624
	Describes monochromatic light filters having maxima at a distance of 20 to 30 Å and a background not over 75 Å. Derives formulas for optical light-filtering. Concludes that the best filters are interference monochromators combined with colored
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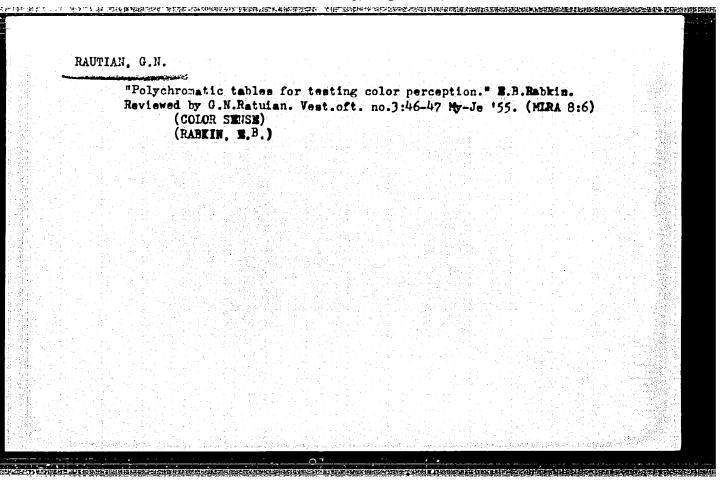
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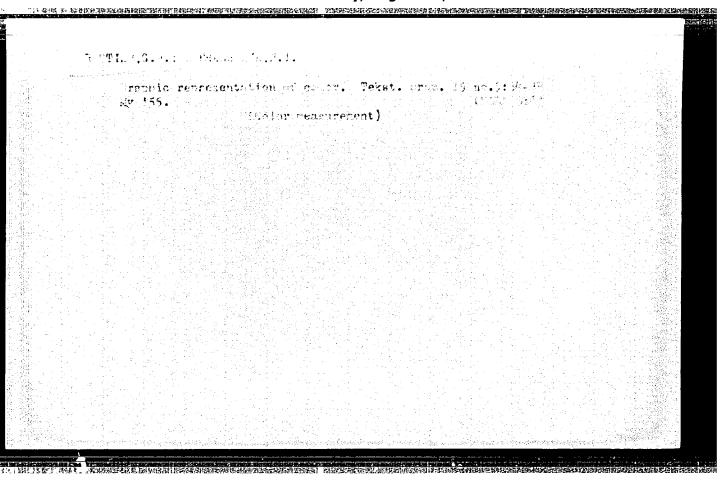
RAUTIAN, G. N. And SOLOV'YEVA, V. P.

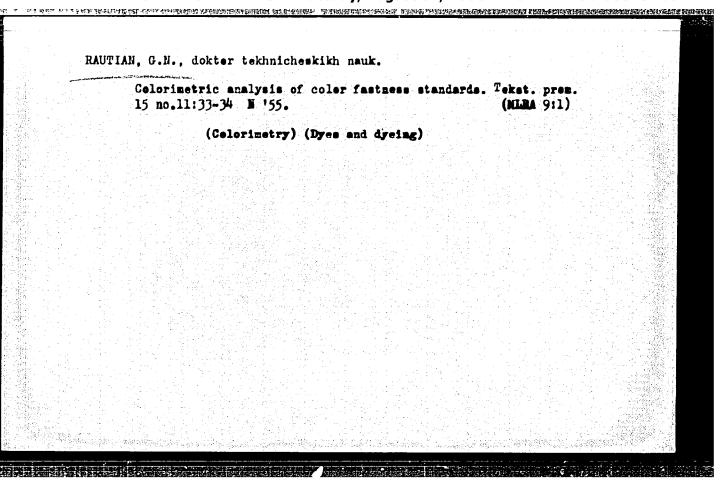
"Effect of Light Background on Sharpness of Color Discrimination," Doka. AN SSSR, 95, No.3, pp. 513-516, 1954

Translation X-1568
Abstract A-53199, 23 Jul 56

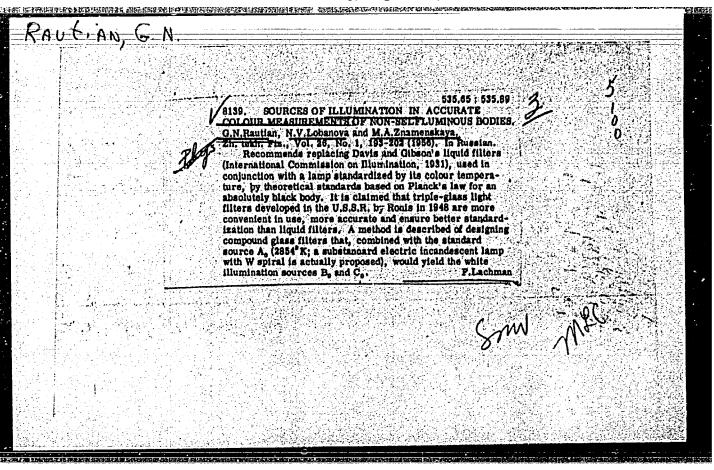
RAUTIAN, G.N. -RAHTHAN, C. H. USSR/Biophysics **Cerd** 1/1 Authors Rautman, G. N. and Solov'eva, V. P. Title s Effect of brightness level on the sharpness of color discrimination 1 Dokl. AN SSSR 95, 6, 1189 - 1192, 21 Apr 1954 Periodical Abstract s Describes an experimental determination and study of thresholds of color discrimination. The experiment has been performed with the help of a tube-photometer, two colorimeters coupled together, and specially arranged revolving discs whose color brightness and size could be regulated. Diagrams. Institution Submitted : 11 Feb 1954

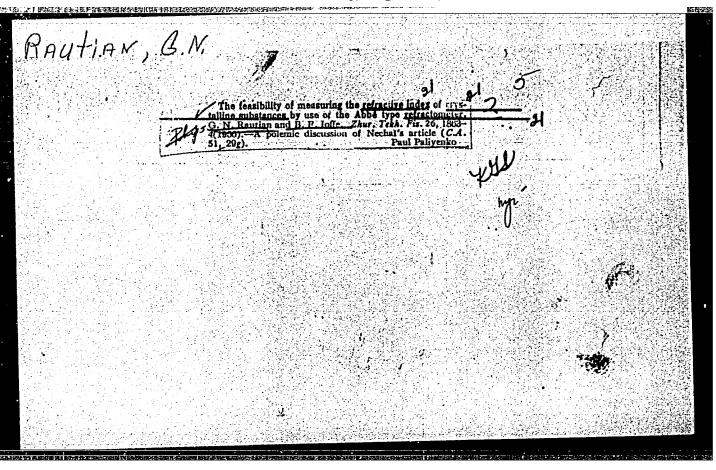


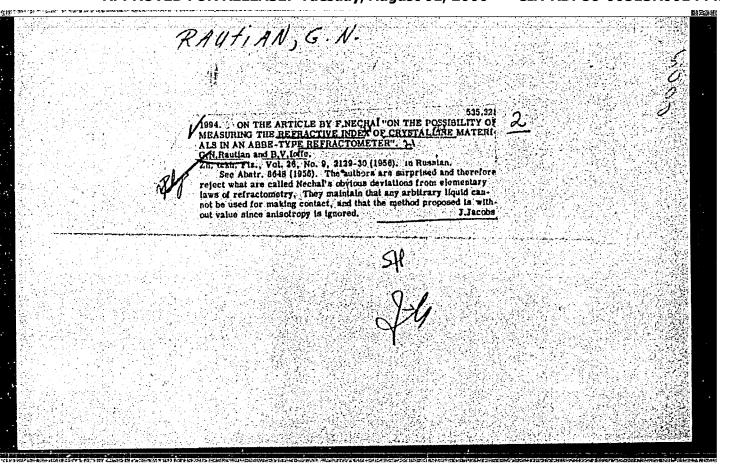


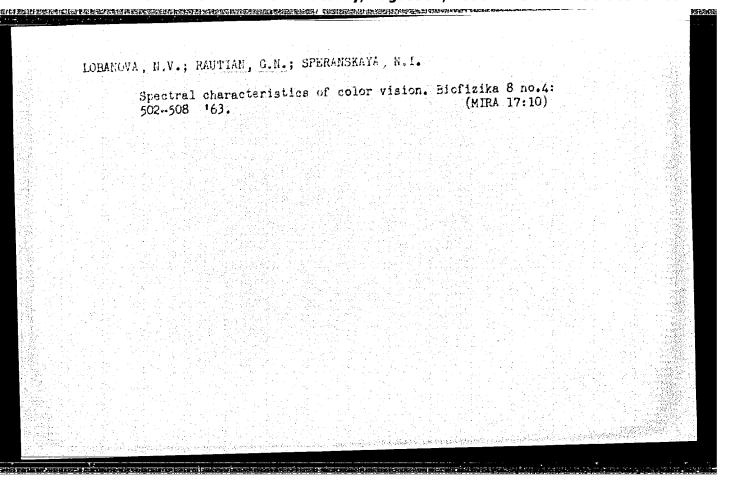


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				설계 : - 현 및 설계보다 하는 기계 현 보통 중요 소요 :		
보고 있는 것이 되었다. 그 사람들은 사람들에 가장 보고 있는 것이 되었다. 그 사람들은 사람들은 사람들이 되었다. 그리고 있는 것이 되었다. 그리고 있는 것이 되었다. 그리고 있는 것이 없는 것 중요 보고 있는 것이 되었다. 그는 사람들이 되었다. 그런 것이 되었다. 그런 사람들은 사람들은 것이 되었다.						



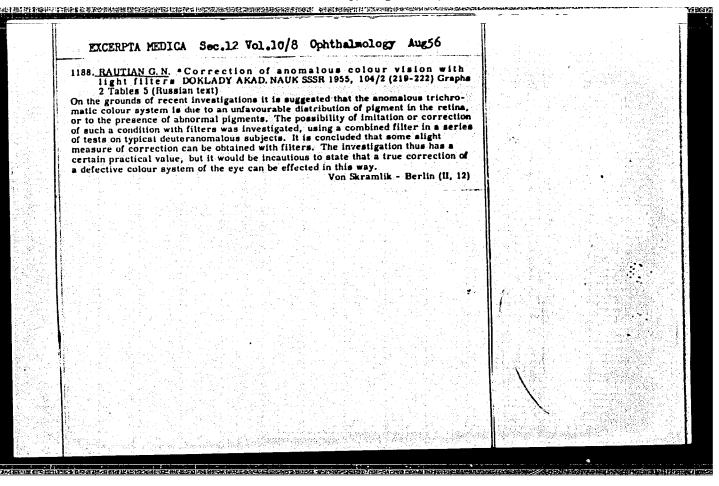






"APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R001444



APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R0014443

RAUTIAN, G.N.; LOBANOVA, N.V.; ZHAMENSKAYA, M.A.

On light sources in the precision photometry of nonluminous objects. Zhur.tekh. fiz. 26 no.1:193-202 Ja *56.(MLRA 9:6)

(Photometry) (Light filters)

RAUTIAN, G.N.

USSR / PHYSICS SUBJECT

CARD 1 / 2

PA - 1404

AUTHOR TITLE

PERIODICAL

RAUTIAN, G.N., JOFFE, B.W.

On the Article by F.NECAJ "Concerning the Possibility of Measuring the Refraction Index of Crystalline Bodies on the Refractometer,

Type Abbe".

Zurn.techn.fis, 26, fasc.9, 2129-2130 (1956)

Issued: 10 / 1956 reviewed: 10 / 1956

The article by F.NECAJ on measuring refraction indices of crystals on the "Abbe type" refractometer is surprising because of the fact that it is contradictory to the generally known principles of refractometry which can be proved in an ele-

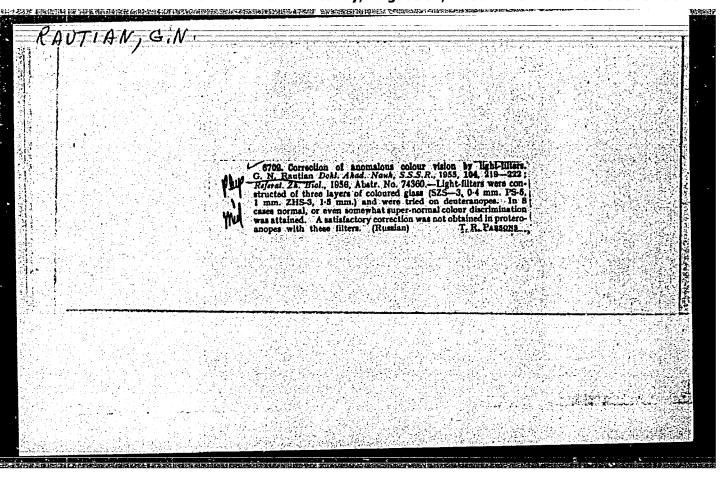
On page 437 (Zurn.techn.fis, 26) the authors make the statement that "any" liquid may serve as a liquid layer between the prism of the Abbe-refractometer and the sample to be investigated, "as long as it moistens the crystal". The elementary truth, however, which is always repeated in instructions of use issued together with this apparatus is that the refraction index of the liquid intermediary layer must be greater than that of the sample to be investigated. Consequently, it is not possible to use just "any" liquid, nor is it possible that this layer consists merely of air (if the sample is placed upon the prism in a "dry" condition), which

fact the authors shortly mentioned on page 437. It is incomprehensible how it was possible for the authors, on the Abbe-refractometer, to find the refraction indices (from 1,52 to 1,56) of the substances enumerated in table 1 if water was used as an intermediary layer (np=1.333). It is quite impossible that the authors were able to see boundaries which actually corresponded to the limiting angle for glass and for the mica which were laid one

Zurn.techn.fis, 26, fasc.9, 2129-2130 (1956) CARD 2 / 2 PA - 1404

on top of the other and were moistened with water "for the purpose of establishing contact". The authors alleged that the refraction indices of the crystalline fragments, i.e. bodies of irregular shape, are measurable "by pouring a liquid on to the prisms of the refractometer where the crystal is mounted for the purpose of establishing an optical contact". By studying the text of the article, however, we find that the authors' statement is without foundation, because they carried out their experiments with small plates having a smooth surface and not with irregularly shaped fragments. The fact that the Abbe-refractometer is useless for work carried out with anisotropiy crystals is not due to the "dispersion of light on the boundaries where contact between prisms and crystals exists", as the authors vaguely alleged (p.436), but to the difficulties arising from the precise orientation of the crystal with respect to the surface of the refraction rays, the latter being necessary when working with anisotropic bodies by the method of the limiting angle. It is surprising that, when investigating the question as to measuring the refraction index of crystals, F.NEČAJ completely ignores the anisotropy of the refraction of light in crystals. For such typically anisotropic bodies as gypsum, ice, acetamide, etc., the authors mention only one refraction index although it is generally known that anisotropic crystals are characterized by two or three different indices. As to the crystallization of the substance on the prism of the refractometer, which is suggested by the authors, it must be said that this method has already been known for a long time as being applicable in the case of easily melting isotropic bodies, but for anisotropic bodies it is obviously unseless because of the indefinite orientation of the crystal obtained in the polycrystalline plate if it is intended to measure with some degree of accuracy. INSTITUTION:

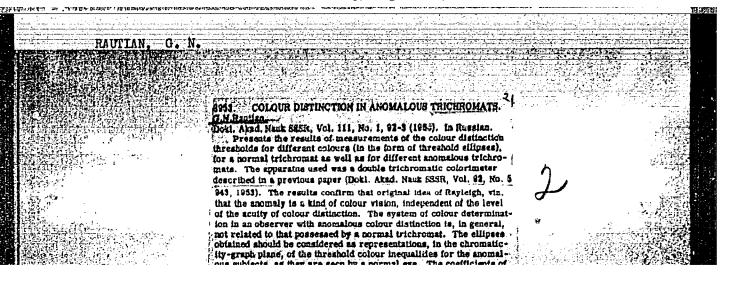
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Colonyales and Colonial Coloni	Correction of anomalous color vision by light filters. Dokl.AS SSSR (NIRA 9:2)	
	1.Predstavleno akademikom A.S.Tereninym.	100 100 100 100
	(Color sense) (Light filters)	
	나는 물리가 되었다. 이렇지나 보고 하는 그리는 그리는 이번 모든 살이다.	
	마르지나 중점에 가는 바꾸게 하다 하는 것도 되었습니다. 그는 그리는 이 모든 것으로 되었습니다. - 그림 대통 사람들은 바꾸게 되었습니다. 그는 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은	
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	· 사람이 가능하는 사람들이 되었다. 그 사람들이 아니는 사람들이 그렇게 다른 것이다. 아니는	
	고 있다. 하는 하는 이번 그를 가장하게 되었다. 그는 모양 그리고 있는 것으로 들어들고 보고 있다. 그는 그는 그는 그는 그를 가고 있다. 그는 그를 보고 있다. 그 그는 것 같아 있는 것 같아 있는 것 같아 그는 것이 되었다. 그는 것이 되었다는 것이 되었다. 그는 것이 되었다. 그는 것이 되었다. 그는 것이 되었다.	
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	경기를 하게 되는 것이 가장 하는 것 같아. 그는 것은 그는 그를 가는 말라고 말했다. 중	
	물이 되면 있는 그리는 아내를 그들이 들어 있을까지 않는데 글이를 걸 먹었다.	



IOFFE, Boris Veniaminovich; RAUTIAN O.N., doktor tekhnicheskikh nauk, redaktor; SHCHERBAKOVA, C.A., redaktor; C. NOVA, A.V., tekhnicheskiy redaktor.

[Manual on refractometry for chemists] Rukovodstvo po refraktometrii dlia khimikov. [Leningrad] Izd-vo Leningradskogo univ., 1956. 209 p. (Refractonetry)

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51-6-26/26

AUTHOR:

None given.

TITLE:

XI Lecture imeni Academician D.S. Rozhdestvenskiy.

(Odinnadtsatyye chteniya imeni akademika D. S.

Rozhdestvenskogo.)

PERIODICAL:

Optika i Spektroskopiya, 1957, Vol.II, Nr.6,

p. 828. (USSR)

ABSTRACT:

Complete Translation.

The XI Rozhdestvenskiy Lecture, named after one of the founders of the State Optical Institute imeni S.I.

Vavilov, took place at that Institute on 16th May 1957.

Two papers were presented at this lecture.

In his paper "On Colour Vision", Prof. G.N. Rautian

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Card 1/4

this information for coded transmission to the brain.

51-6-26/26

XI Lecture imeni Academician D.S. Rozhdestvenskiy.

The three-dimensional character of colour as a retinal stimulus forms the basis of measurement of colour and its representation in an affine vector space. Of great importance is the problem of the basic physiological system of colour determination since the coordinates of colour in that system characterise the spectral sensitivity of the three types of receivers on the retina.

Rautian discussed the method of finding directions of the physiologically important coordinate axes by tests using dichromats reported in the Yustova-Nyuberg work. He also discussed other methods used in USSR and based on dichromatism which is either temporal (N.T. and V.N. Fedorov) or spatial (M. Bongard and M. Smirnov).

Establishment of spectral sensitivity curves of the retinal receivers would lead to the most direct methods of study of colour vision. This was shown on the example of a new anomaloscope TOM and the results obtained with it which widen our knowledge of the

Card 2/4

51-6-26/26

XI Lecture imeni Academician D.S. Rozhdestvenskiy.

multiplicity of forms of colour vision and permit us to construct a more elastic and precise classification of these forms. Another example quoted was the proposal for rationalisation of street traffic signals to make them correctly understood by all dichromats.

At the end of the paper the author discussed some new attempts at interpretation of the phenomena which form the basis of selective sensitivity of the retinal receivers.

Candidate of physico-mathematical sciences M.P. Vanyukov presented a paper on "Emission by a Hightemperature Pulse Discharge".

This paper presented the results of the study of certain optical characteristics of spark discharges in heavy inert gases (argon, krypton and xenon) at pressures of 4-10 atm. Using a new photoelectric

Card 3/4

51-6-26/26

XI Lecture imeni Academician D.S. Rozhdestvenskiy.

technique temporal variations of the discharge were recorded in the spectral region from 2500 to 10000 and dynamics of the variation of the form of arc lines in the process of discharge was determined with resolution in time of 10-7 sec and in wavelength of 1 a. The brightness of the spark-discharge channel has a limiting value which in xenon at 5 atm is about 11 x 10° stilbs. In capillary-tube discharges brightness increased continuously with increase of the discharge energy and no saturation in brightness was observed. In the capillary discharges brightnesses up to 50 x 10° stilbs and temperatures up to 94000°k were obtained.

AVAILABLE: Library of Congress.

Card 4/4

AUTHORS:

and Rautian, Lobanova, N. V.

51-1-12/18

TITLE:

New Tables for Calculation of Colour Coordinates. (Novyye tablitsy dlya rascheta koordinat tsveta.)

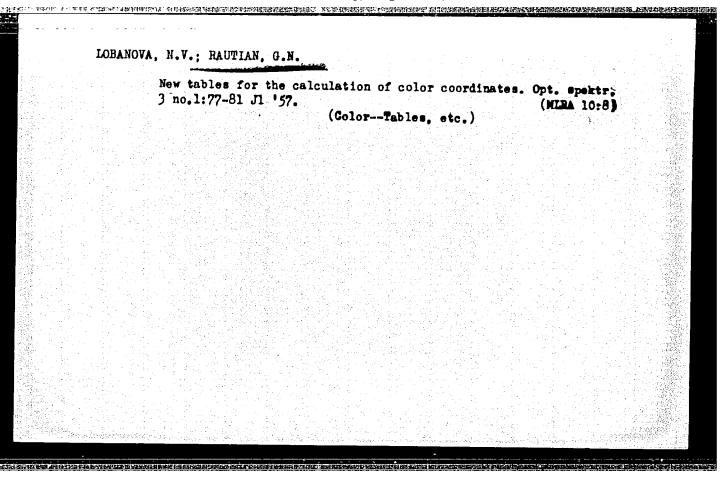
PERIODICAL: Optika i Spektroskopiya, 1957, Vol. III, Nr.1, pp.77-81.

(USSR)

ABSTRACT:

In colorimetry of non-selfluminous objects the International Commission on Illumination recommended in 1931 the use of three sources: A, B and C (Refs. 1, 2). In realization of these sources the following were used: (1) a gas-filled lamp with a colour temperature of 28540K (source A); (2) the same lamp but with a liquid lightfilter of Davis and Gibson (source B with a colour temperature of about 4800°K); (3) the same lamp with another liquid light-filter of Davis and Gibson (source C with a colour temperature of about 65000K) (Ref. 3). In 1955 the Soviet Union introduced a standard FOCT 7721-55 which defines sources B and C as bodies emitting strictly according to Planck's law at colour temperatures of 4800 and 6500 K respectively (Ref.4). To use with the latter standard, the authors give in the present paper tables of spectral distributions of radiant energy density

Card 1/2



AUTHOR: Rautian, G.N.

51-2-14/15

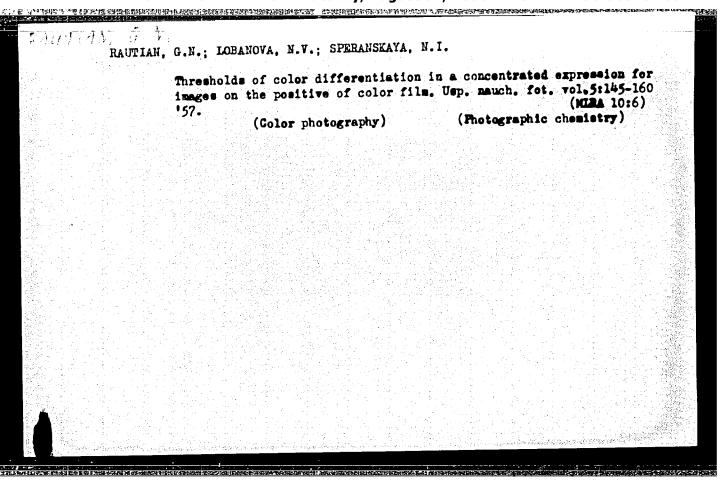
TITLE: On M. M. Gurevich's paper on the State Standard (FOCT)7721-55. (Po povodu stat'i M. M. Gurevicha o GOSTe 7721-55)

PERIODICAL: "Optika i Spektroskopiya" (Optics and Spectroscopy), 1957, Vol.3, No.2, pp.189-190 (USSR)

ABSTRACT: Reply to Gurevich's (Opt. i Spektr. 3,187,1957, see the preceding abstract) criticism of the Soviet Standard 7721-55 on colorimetry. The present author points out that the use of liquid colour filters of Davis and Gibson /Ref.2/, recommended by the International Commission on Illumination in 1931, is very troublesome and the results are not precisely those which were intended. The new Soviet State Standard 7721-55 recommends centrally-prepared glass colour filters. These are more permanent and easier to use. When properly calibrated the glass filters are expected to give better approximations to theoretical spectral distributions. There are 5 references, 3 of which are Slavic. References cited: /2/

AVAILABLE: Library of Congress

Card 1/1



USSR / Human and Animal Physiology. Serse Organs.

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 70603

Author : Rautian, G. N.

Inst : Not given
Title : The Problem of the Thresholds of Color Discrimination

(Certain Observations on the Article by McAdam Con-

cerning our Work on Color Discrimination)

Orig Pub : Biofizika, 1957, Vol 2, No 5, 637-641

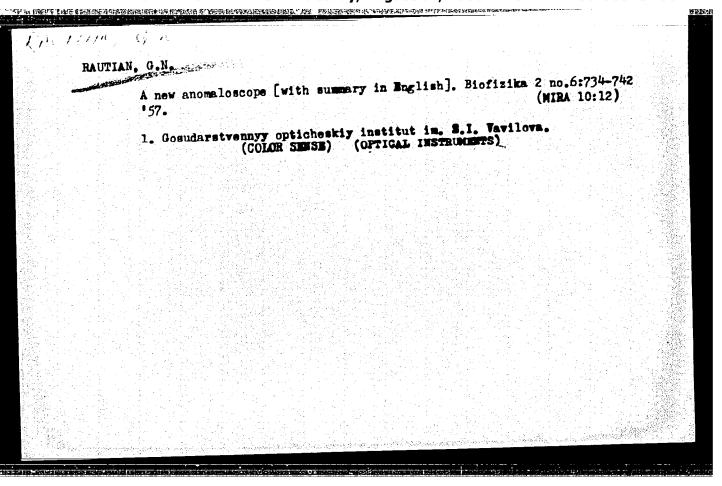
Abstract : No abstract given (See Rumanian Journal of Biology,

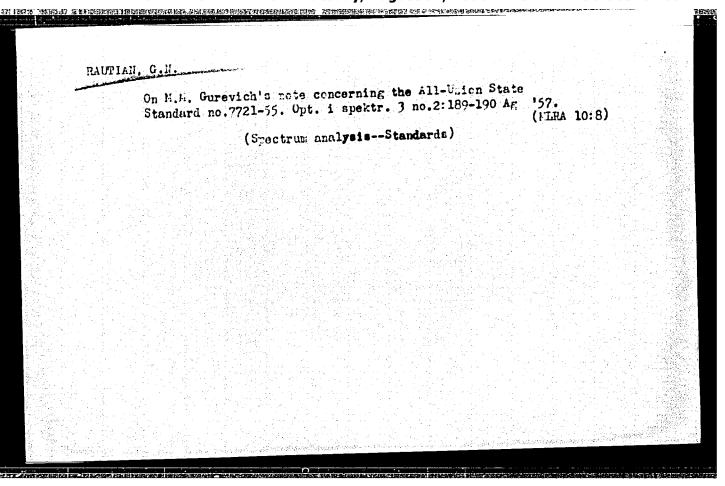
1957, 43244)

Card 1/1

152

No. of the latest and	Color discrimination of point sources. F 157.	Dokl.AN SSSR 112 no.6:1037-1040 (MLRA 10:5)	
	1. Predstavleno akademikom A.N. Terenin	yn. (1861)	
	(Color sense)		
	회사의 가는 잘 있는 생활들이 사용되었다. 그 살아서	공기하였습니다. 말라보다는 그렇게하다 그렇게	
	보통 아이라 여러를 내놓았다. 그렇게 된 나 가 하시다	일보통 사용회사는 하는 경우를 가는 것들이 모르는 하는 것이다.	
	교육 등 시간 경찰의 불환경 등록 그 시간 중심한다. 이 글로그		
		김정보 회복 하고 기회에 가장 보다 그는 그는 네트를 받는다.	
	마리 마리의 회사장의 희망했다면 하고 있다면 화가 있었다.		
		나는 왜 개를하면 말했다고 하면 하는데 보는다.	
	불다 되었다. 회사를 보고 있는 경험 그리고 있다. 그 그 없다.	되는 보기 사람들은 그리고 얼마나 되는 것이다.	
	및 근임하다 모인하는 말을 통해 함께 하는 동안이를 하는 것 같아?	원레 글로 프라마 네스라고 하는 유명으로 모르는 하고?	
		[발흥하다] 전 12 12 12 12 12 12 12 12 12 12 12 12 12	
	내는 이 없는 것이 없는 하는 사람들이 얼마나 나를 다 먹었다.	중심 경험을 가득하는 것 같아. 그는 모든 그 하나 이 이 없는	
		발생하는 발표를 받고 있었다면 하고 있는데 어느 없다.	
	그리 하게 되면 하지만 물리를 걸었다면 하나 하나 모든 하나?	그림부족목록 회의 취임 (아시아 리아이) 시네트	
	그러지 그는 물과 처음 발생들은 차려면 사용 물병으로 받았	생활님들의 공학 가는 아이는 이 시간이 되었다. 그 이 그래요	
		종 활시[경임시] 연변하다고 아이아 모르 말리	
		통물이 물었다면 하는 것이 그런 그런 하는데 하는 것이다.	
	이 보고 된다고 먹는 중 경화되는 전환하고 이어 들어가는	공연하다 발맞으로 한 그는 일하는 하는 않다면	
	되고 그는 10일 시간 중요한 경기를 다는 경기를 보았다.	수도함 호텔들이 이번에 하지 않는 이미국이 됐습니	
囊子的名词形	원 등 이렇게 된 것 같아 얼마를 가는 그들은 경기 되었다.	그 경우 전 경우 보고 있다는 그들도 살았다.	
	일이 얼마를 만나면 걸었다. 그 아무는 이 모르는		
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"APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R001444

RAGTHANGH

RAUTIAN, G.H., GUR'EVA, M.K. AUTHOR:

。 18月1日 19月2日 - 18月1日 - 18月1日

PA - 2336

TITLE:

Color Discrimination of Point Sources. (Tsvetorazlicheniye to-

chechnykh istochnikov, Russian).

Doklady Akademii Nauk SSSR, 1957, Vol 112, Nr 6, pp 1037 - 1040

(U.S.S.R.)

Received: 4 / 1957

Reviewed: 5 / 1957

ABSTRACT:

PERIODICAL:

The present work determines the differences between the colors of some punctiform signals immediately on the thresholds by means of a double three-color colorimeter (G.N.RAUTIAN, Dokl.Akad.Nauk, 1953, Vol 92. Nr 5, 945). The 5 colors chosen for this purpose are similar to the colors used in usual signal technique. The coordinates of these colors are given in a table in the apparatus system and in the international system. Measurements were carried out by two observers with normal ability for color discrimination and the average of the values found by them was taken. The numbers of the thresholds for all 5 colors were determined; they are nearly constant. Therefore, angular dimensions of the sources within certain limits exercise no influence on the sharpness of color discrimination. Such sources can in fact be regarded as punctiform. At from 8.10-5 to 4.10-7 lux the number of thresholds among colors changes in the case of a 90-fold modification of illumination strength only by about the 2- to 6-fold. Dependence on the logarithm of illumination is linear.

Card 1/2

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PA - 2336

Color Discrimination of Point Sources.

For the purpose of investigating the influence of the disparate location of the sources of color discrimination the number of thresholds was determined for points which had a constant angular diameter of 5' and were separated from one another by 10', 30', 19 30, and 50. The sharpness of color discrimination has a weakly marked maximum at the distances between points and 10, which, in the case of a low number of thresholds, is nearly equalized. Color discrimination in the case of punctiform sources is many times (by about the 5- to 15-fold) inferior than in the case of extended sources. Besides, these differences for different pairs of color are different.

The rules found here are of importance for colored signalization over large distances. (3 illustrations and 4 tables)

ASSOCIATION:

Not given

PRESENTED BY: Member of the Academy A.N. TERENIN.

SUBMITTED:

2.7.1956

AVAILABLE:

Library of Congress.

Card 2/2

20-1-15/44

AUTHORS:

Lobanova, N.V.

TITLE:

Relationship between the Color Spaces of Normal and Abnormal Trichromates (Sootnosheniye tsvetovýkh prostranstv normal'nogo i anomal'nogo trikhromatov)

PERIODICAL:

Doklady AN SSSR, 1957, Vol. 116, Nr 1, pp. 56 - 59 (USSR)

ABSTRACT:

At present it may be assumed that at least the deuteranomalous are distinguished from normal observers by modified curves of the spectral sensitivity () () of their receives which are "sensitive to green" (which do not operate in the case of deuteranopes). Therefore, they have their own manifoldness of colors which, like the color space of normal trichromates may be considered to be an affine three-dimensional vector space. Every point of such a space can be brought into a univocal relation with a point of the ordinary Euclidian space for the purpose of geometric representation. Because of the difference of the spectral sensitivity of the receiver, the color vector corresponding to a certain spectral distribution of radiation density (in the case of a common system of coordinates) must, in the case of an anomalous trichromate, take up a position that is different from

Card 1/3

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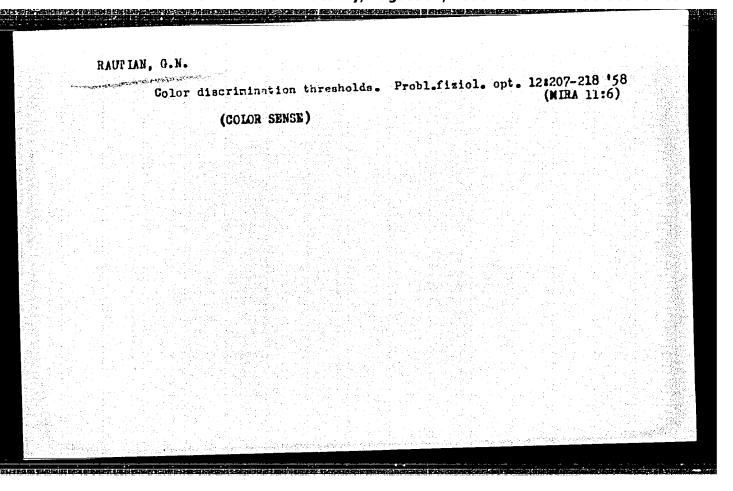
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Relationship between the Color Spaces of Normal and Abnormal Trichromates

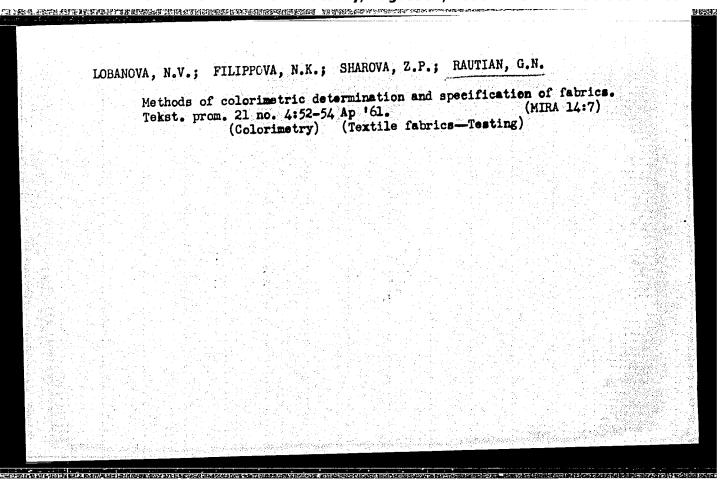
PRESENTED: April 18, 1957, by V.P. Linnik, Academician

AVAILABLE: Library of Congress

Card 3/3



N. G. N. Variations of d10 no.1:225-227 J1	chronatic color vision. 60. (COLOR SENSE)	Dokl AN SSSR 133 (MIRA 13:7)	
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3/058/62/000/011/024/061 A160/A101

AUTHOR:

Rautian, G. N.

TITLE:

Land's experiments with a two-color projection

PERIODICAL:

Referativnyy zhurnal, Fizika, no. 11, 1962, 29,

abstract 11G261 ("Tr. Leningr. o-va yestestvoispyt.", no. 1,

1961, 72, 148 - 150)

A summary of a report read at the Leningradskoye otdeleniye Ob-TEXT: shchestva yestestvoispytateley (Leningrad Branch of the Society of Naturalists) in connection with Land's publication on the "striking new theory of color",

[Abstracter's note: Complete translation]

Card 1/1

ROZHDESTVENSKIY, Dmitriy Sergeyevich, akademik; LINNIK, V.P., akademik, red.; LEBEDEV, A.A., akademik, red.; TUDOROVSKIY, A.I., red.[deceased]; FRISH, S.E., red.; LUIZOV, A.V., doktor fiz.-mat. nauk, red.; RAUTIAN, G.N., doktor tekhn. nauk, red.[deceased]; PENKIN, N.P., doktor fiz-mat. nauk, red.; KIRIKOVA, G.L., red.izd-va; SOROKINA, V.A., tekhn. red.

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[Selected works] Izbrannye trudy. Moskva, Izd-vo "Nauka," (MIRA 17:4)

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CIA-RDP86-00513R001444 "APPROVED FOR RELEASE: Tuesday, August 01, 2000

USSR/Physics - Spectral analysis

Card 1/1

Pub. 43 - 19/62

Authors

Bazhulin, P. A.; Rautian, S. G.; Sokolovskaya, A. I.; Sushchinskiy, M. M.

Title

Methods of studying the widths of combined light diffusion lines

Periodical

Izv. AN SSSR. Ser. fiz. 18/6, 678-679, Nov-Dec 1954

Abstract

The results obtained during the study of various methods for measuring the width and contour of combined light diffusion lines are briefly outlined. The possible distortion factors which may effect the width and form of the lines are listed. It is shown that the distorting effect of each of the factors depends not only upon the width but also the form of the test mechanism functions as well as the form of the diffusion lines investigated. Three USSR references (1941-1953). Table.

Institution: Acad. of Sc., USSR, The P. N. Lebedev Phys. Inst.

Submitted

"APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R001444

FD-988 USSR/Physics - Raman effect Pub. 146 - 12/20 Card 1/1 : Rautian, S. G. Author : Selection of the condenser in the investigation of combination scattering Title of light [Raman effect] : Zhur. eksp. i teor. fiz., 27, No 5 (11), 625-635, Nov 1954 Periodical. : The author gives the calculations for the design of condenser systems used in the photographic and photoelectric recording of spectra of com-Abstract bination scattering. He acknowledges the posing of the problem by Academician G. S. Landsberg and the assistance of V. I. Malyshev. : Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR Institution : January 12, 1954 Submitted

USSR/Physics - Raman spectra

FD-3253

Card 1/1

Pub. 146 - 12/44

Author

: Bazhulin, P. A.; Rautian, S. G.; Sokolovskaya, A. I.; Sushchinskiy,

Title

: Methods for the investigation of the width of lines of combination scattering of light and their application

Periodical

: Zhur. eksp. i teor. fiz., 29, No 6(12), Dec 1955, 822-829

Abstract

: A consideration of the influence of various factors upon the observed width of combination-scattering lines, and a description of methods for the exclusion of these factors' influence upon the results of measurements. The authors present the results of measurements of the width of a number of combination-scattering lines in a prismoid spectrograph with large dispersion. They compare the obtained data with data found by other methods. The authors thank Academician G. S. Landsberg for his advice and Kh. Ye. Sterin, V. T. Aleksanyan for the preparation of the data. Seventeen references: e.g. Kh. Ye. Sterin, Dissertation, Physical Institute im. P. N. Lebedev, Acad. Sci. USSR, 1949.

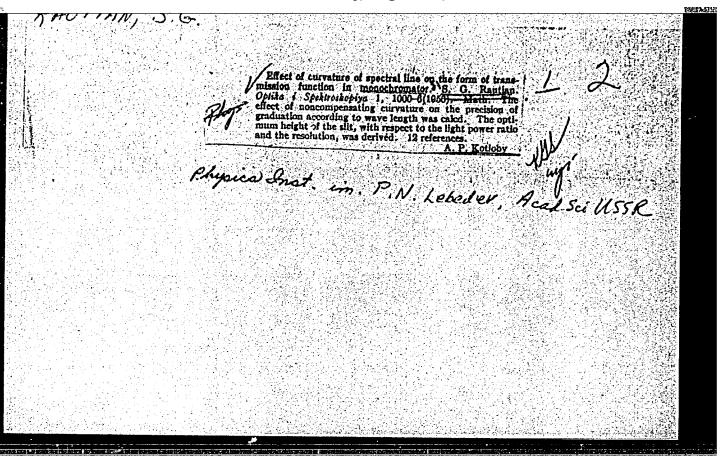
Institution

: Physical Institute imeni P. N. Lebedev, Academy of Sciences USSR

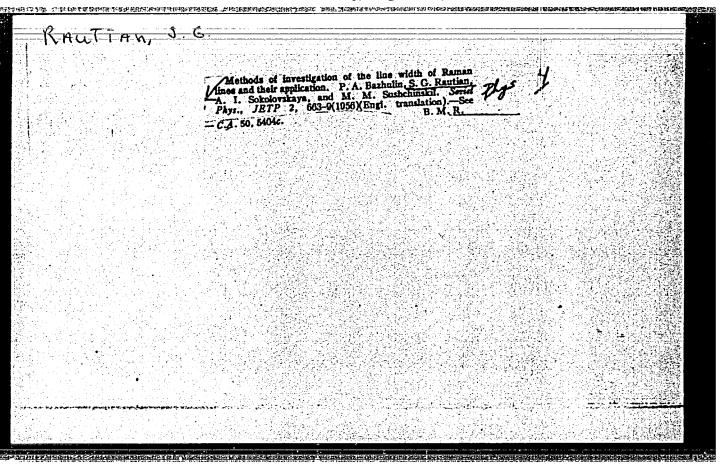
Submitted

: July 15, 1954

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443



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KHSTIHI,

USSR / PHYSICS

CARD 1 / 2

PA - 1437

SUBJECT AUTHOR

RAUTIAN, S.G.

On a Measure for the Resolving Power of an Optic Device.

TITLE PERIODICAL Dokl. Akad. Nauk, 109, fasc. 4, 743-745 (1956) Issued: 10 / 1956 reviewed: 10 / 1956

The distribution of the amplitude $\varphi(x)$ in the image of a one-dimensional object f^{∞} $a(x-y)\Psi(y)dy$. (1) is described by the following integral expression: $\varphi(x)$

Here Y(x) is the distribution of the amplitude in the object. For optic devices (which, from the point of view of geometric optics are ideal) with gap-like apertures usually the following formula is assumed to apply: $a(x)=(1/\pi)\sin x/x$; $A_f=1$ for $|f|<1/2\pi$ and $A_f=0$ for $|f|>1/2\pi$.

Next, KOTEL'NIKOV'S theorem and views expressed on the same subject by G. TORALDO DI FRANCIA, J.Opt.Soc.Am., 45, No 7, 497 (1955), ibid.46, No 1, 72 (1956) are discussed. On this occasion it is shown that the opinion expressed by G. TORALDO DI FRANCIA, that optical devices may be accurately described by the above functions A, is alleged to be wrong, for the spectrum of the image is, strictly speaking, infinite. In an approximated solution of the diffraction problem the frequencies exceeding a certain limit are lacking in the optical image. However, this does not apply in the case of an exact computation of diffraction in the aperture.

In addition, the twodimensional problem of the diffraction of a light wave on a plane screen is investigated, and the following distribution of the field in the

Dokl.Akad.Nauk, 109, fasc.4, 743-745 (1956) CARD 2 / 2 PA - 1437 image is obtained: $\varphi(x) = A \int_{-\infty}^{\infty} \left[ik\varphi(f) + \partial\varphi/\partial n \right] e^{i2\pi f x} df$. Thus, the spectrum φ_f is proportional to the linear combination $ik\varphi + \partial\varphi/\partial n$. According to the formulae mentioned above φ and $\partial\varphi/\partial n$ would vanish simultaneously on the screen which is absurd from a physical point of view. Just because this is impossible the spectrum of the optical image is strictly speaking unlimited. Thus, the conditions of KOTEL'NIKOV'S theorem are not satisfied and $\varphi(x)$ cannot be clearly determined by its values in a discrete sequence of points. Such representations are suited only for a more or less exact interpolation, in which connection the necessary degree of approximation apparently depends on measuring accuracy. It follows from all that has been said that optical devices are no exception to the

It follows from all that has been said that optical devices are no exception to the rule among all other linear transmission systems. The only difference could be that the number N of the degree of freedom depends on the noise level. It is therefore not possible to introduce a quantitative measure of acuity that is independent of measuring errors. All these conclusions apply also to the threedimensional case and even to self-luminescent objects. These deliberations refer only to the problem of the number of degrees of freedom of the image, but the main problem, i.e. that of the uniqueness of the solution of (1) remains unsolved.

INSTITUTION: Physical Institute "P.N.LETEDEV" of the Academy of Science in the USSR.

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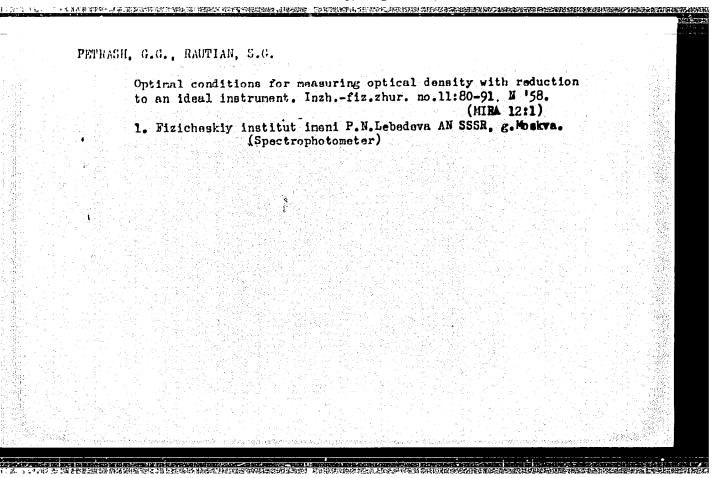
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PETRASH, G.G.; RAUTIAN, S.G.

Consideration of distortions in the apparatus and the characteristics of infrared spectrophotometers. Inzh.-fiz.zhur. no.7:61-71 J1 '58. (MIRA 11:8)

1.Fizicheskiy institut imeni P.N. Lebedeva AN SSSR, Moskva. (Spectrophotometer)



7(0), 24(7) AUTHOR:

Rautian, G. G.

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SCY/53-66-3-4/7

TITLE:

New Devices and Measuring Methods (Novyye pribori i metody izmereniy) Practical Spectral Instruments (Real'nyye spektral'nyye

pribory)

PERIODICAL:

Uspekhi fizicheskikh nauk, 1958, Vol 66, Nr 3, pp 475-517(USSR)

ABSTRACT:

The author of this paper gives a survey of the theory of the practical spectral analysis in contrast to the "ideal", "artificial" or "distorted" (iskasheniya as the author calls it in the following) spectral analysis, such as is obtained by a Fourier (Fur'ye) analysis of the radiation investigated. First, the author divides the factors varying the real spectrum into two groups (macro- and microstructural influence) which he discusses. Further, the qualitative modifications by means of factors of the second group are discussed, and their influence upon the representation of the spectral energy distribution is investigated. For the distribution function f(x') observed, the following formula (1) is given:

Card 1/4

New Devices and Measuring Methods.

SOY/53-66-3-4/7

Practical Spectral Instruments

$$f(x') = \int_{-\infty}^{\infty} a(x'-x) \varphi(x) dx \text{ (for the graphical representation)}$$

of the curves of figure 1). This formula takes variations both in the optical and in the recording parts of the device into account. (1) connects the artificial quantities as well as those observed by means of a real device not only in the case of spectroscopical but also of ther physical measurements. Several fields of application for (1) are discussed. Furthermore, the apparatus function is dealt with and a formula is given for the objective aperture diffraction (Refs 28-30):

 $a(x) = \frac{1}{s_0} \left[\frac{\sin \pi x/s}{\pi x/s_0} \right]^2$

where $s_0 = \lambda f/D$. This function is subjected to a Fourier's analysis. In the following, apparatus functions of various forms are investigated and Fourier transformations are given. Figure 2 shows the course taken by various functions, and

Card 2/4

New Devices and Measuring Methods.

sov/53-66-3-4/7

Practical Spectral Instruments

figure 3 shows the corresponding Fourier transformations of these curves. Further, the variation factors of a third group (measurements of errors) are dealt with by means of the equation corresponding to (1):

$$f(x) = \int_{-\infty}^{\infty} a(x-x') \varphi(x') dx' + \xi(x) \qquad (27).$$

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In paragraph 2 of the paper the case of absolutely accurate measurement is dealt with on the basis of the function (1) and (27). Investigation is based upon the following question: If real distribution consists of two monochromatic lines the distance between which is d, i.e. that

$$\varphi(x) = \frac{1}{2} \left[\delta(x - x_0 - \frac{d}{2}) + \delta(x - x_0 + \frac{d}{2}) \right] \text{ holds, at what d-value}$$

can the two lines still be recorded separately in $x = x_0$ in the case of a minimum of intensity? The problems of resolving power and of the minimum resolvable wave length interval

Card 3/4

New Devices and Measuring Methods.
Practical Spectral Instruments

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are discussed. Reduction methods are discussed and approximation methods are given; several special cases of reductions to the ideal case are discussed, among others the case of an interference spectroscope (Fabri-Pero-standard) (Ref 104). The third paragraph deals with the uniqueness and accuracy of reduction to the ideal case of an apparatus. Again proceeding from (1), the limiting case of an absolutely accurate measurement is dealt with and the uniqueness of possible reduction is investigated. Rangraph 4 finally deals with the problem of resolution. Criteria for resolution are compiled in form of a table for various device functions. There are 9 figures, 1 table, and 130 references, 62 of which are Soviet.

Card 4/4

SOV/51-6-1-9/30

AUTHORS:

Sokolawskave A.I. and Rautian, S.G.

TITLE:

The Effect of the Refractive Index of the Scattering Medium on the Intensity of Line of Raman Scattering of Light (Vliyaniye pokazatelya prelomleniya rasseivayushchey sredy na intensivnostiliniy kombinatsionnogo rasseyaniya sveta)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6. Nr 1, pp 51-54 (USSR)

ABSTRACT:

Several workers have already pointed out the necessity of allowing for the refractive index of the scattering liquid in measurements of the Raman line intensities (Reis 1-3). There are four effects due to the refractive index of the scattering liquid which may affect the Raman line intensities: (1) change of the reflection coefficient at the boundary liquid-glass (of the cell); (2) change of the configuration of rays of exciting light inside the cell; (3) change of the brightness of scattered radiation on leaving the cell; (4) change of the conditions of formation of the image of the cell at the spectrograph alit. The author experimented with a double-walled glass tube (Fig 1) filling the space between the walls with air, alcohol, benzene, toluene and CS2. The inner tube was filled with a liquid in which the Raman scattering occurred. Variations of the reflection coefficient at the

Sard 1/2

The Effect of the Refrective Index of the Scattering Medium on the Intensity of Lines of Reman Scattering of Light

tube wall due to the use of various outer jackets of liquids were found to have only a negligible effect on the Raman line intensities (Fig 2 gives the dependence of the exciting light intensity on the refractive index of the substance in the space between the tube malls). This experiment disposed of the effect (1). The author proved the effects (2) and (4) to be also negligible by using two widely differing sources of light. The Raman lines were hardly affected, as shown by Fig 3, where the same straight line represents the temperature dependence of the 656 cm line intensity in CS2 when two different sources or light were used. Thus only the effect (3) remains and it has to be allowed for, since the change in the intensity of the Raman scattered radiation is proportional to n², where n₁ is the refractive index of the scattering liquid. The authors thank P.A. Bazhulin for his advice. There are 3 figures and 10 references, 5 of which are Soviet and 5 English.

SUBMITTED:

March 27, 1953

Card 2/2

24(4)

Malyshev, V.I. and Rautian, S.G.

SOV/51-6-4-23/29

AUTHORS:

Use of Echelettes at Large Angles of Diffraction (Ispolizovaniye

esheletta pri bolishikh uglakh difraktsii)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 4, pp 550-555 (USSR)

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ABSTRACT:

Echelettes are normally used at small angles of diffraction ψ , since otherwise the intensity of the main maxima are very small. Echelette grooves have a non-symmetrical triangular form shown in Fig 1. The main maxima are strongest when specular reflection from the groove sides is employed (two "blaze" angles ψ_1 and ψ_2 , shown in Fig 1). Normally the ψ_1 angle is used corresponding to reflection from the wider wide of the groove. The angle ψ_1 varies between 10 and 25°. On first sight the use of the second "blaze" angle ψ_2 seems to be inconvenient because the transverse section of the beam $A\psi_2$ is much smaller than $A\psi_1$ angle ψ_2 has certain advantages. The authors discuss the use of an echelette grating in conjunction with a monochromator. Advantages of the "blaze" angle ψ_2 are dealt with theoretically and the theory is confirmed by experiments. For these experiments the authors used a

Card 1/2

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SOV/51-6-4-23/29

Use of Echelettes at Large Angles of Diffraction

double-beam diffraction infrared spectrophotometer DAIKS-Fl constructed in the Optical Laboratory of FIAN (with the help of A.M. Surov). The main monochromator is assembled using the schome described by Ebert and Fastie (Refs 5, 6). Preliminary monochromatization was produced by an instrument using LiF or KBr prisms. The complete assembly is shown in Fig 2. The grating used was an echelette GOI number 2538 with 300 lines/um and a "blaze" angle of 180. To check the theoretical conclusions the rotational structure of a methane band was recorded in the region 1.7 µ. Similar measurements were made on mercury lines at 1.35, 1.39, 1.53 and 1.71 µ. In all cases good agreement between theory and experiment was obtained. It was found that on using the echelette grating with the "blaze" angle \$\varphi_2\$ the resolving power of the apparatus could be doubled. Furthermore, the echelette could then be used in a wider range of wavelengths. The experiments carried out showed that the echelettes prepared by F.M. Gerasimov at GOI were of sufficiently high quality for their second "blaze" angle to be used. There are 3 figures and 14 references, 7 of which are Soviet, 6 English and 1 German.

SUBMITTED: April 19, 1958

Card 2/2

50./51-7-4-22/32

... HOIR:

Rautian, S.G.

TITLE:

On the Ecnelette Theory

PERIODICAL: Optiza i spektroskopiya, 1959, Vol 7, Nr 4, pp 564-566 (USSR)

LES TRACT:

Only a small amount of work has been done so far on the distribution of energy in the diffraction orders produced by a grating. Two difficulties appear here. Firstly the grating constant is of the order of light wavelengths and consequently the distribution culculated according to Kirchhoff may be seriously in error. Secondly the neighbouring grooves may screen the incident and diffracted waves. The present note deals with double reflection inside a groove, which is one of such screening effects. The author discusses the special case of a triangular groove It is assumed that a plane with 900 petween the groove faces (Fig 1). wave falls on the grating; the wave vector lies in the principal plane of the grating and makes an angle with the normal to the grating and only the region $-\pi/2 + \delta \leqslant \psi \leqslant \delta$ is considered, where δ is the angle between the plane of the grating and the larger face of the groove. Some of the rays are reflected from one of the fuces but miss the other face (for example ray 1). Other rays are reflected from both faces and return along the same path as the incident ray (rays 2 and 2'). Simple

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On the Echelette Theory

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calculations lead to physico-optical formulae for the grating reflection coefficient & . Fig 2 shows the values of the reflection coefficient calculated using these formulae for various orders in of the line $\alpha=5791$ Å when the grating constant is d=1/300 mm and b=180. Allowance for double reflection inside the grating grooves leads to a large number of intense orders with negative in (Fig 2). This theoretical conclusion is valid for slightly deformed groove faces and when the angle between the faces is other than 900. Fig 3 shows measured reflection coefficients of GOI (State Optical Institute) Gratings with 600 lines/mm $(\lambda = 5461 \, \text{Å}, \, h = 170$, see Fig 3a) and 300 lines/mm $(\bar{\lambda} = 5461 \, \text{Å}, \, \text{and})$ h = 32.70, see Fig 36). The agreement between the experimental (Fig 3) and the theoretical (Fig 2) distributions is good. It rollows that the large number of intense negative orders, reported by many spectroscopists, is due to double reflection inside grating grooves. Double reflection leads to an increuse of the reflection coefficient & at large angles of diffraction. This makes it possible to use the nigh resolving power of gratings at large values of (Ref 9). There are 3 figures and 9 references. 4 of which are soviet, 4 English and 1 translation.

DUH.ITTID: February 26, 1959

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7(3), 24(7)

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A Vacuum Double-beam Diffraction Spectrophotometer for the

Infrared Range

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,

Vol 23, Nr 10, pp 1237-1239 (USSR)

ABSTRACT:

At the Opticheskaya laboratoriya im. G. S. Landsberga FIAN (Optical Laboratory imeni G. S. Landsberg of the FIAN) a spectrophotometer with high resolving power was constructed, which is described. The device consists of three main parts: The double beam condenser with the photometrical recording- and amplifying systems, the premonochromator, and the diffraction monochromator. The optical scheme of the entire device is shown by figure 1 and is discussed in detail. The condenser consists of a system of spherical (f=180 and 200 mm) and plane mirrors; the premonochromator consists of a spherical (f=300 mm) and two plane mirrors and LiF- or KBr-prisms; the diffraction monochromator consists of two spherical mirrors with f=2000 mm, one with f=50 mm, the grating, a plane mirror, and two KBr-lenses (f=540 and 700 mm). A reducer makes it possible to adjust the instrument to 11 different rotational speeds (from 5.10-4 to

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A Vacuum Double-beam Diffraction Spectrophotometer for the Infrared Range

 5.10^{-7} rad.sec⁻¹), the swing range is 20° . Figure 2 shows an absorption spectrum recorded by means of this instrument (CO at 4.56μ). The entire device weighs about one ton. The vacuum of 10^{-1} - 10^{-2} torr is maintained by means of a pump of the type VN-2. The spectral width of the slit within the range of $1.5-5\mu$ is 0.2-0.25 cm⁻¹. There are 2 figures and 5 references, 4 of which are Soviet.

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