TODOROV, I.

    We produced 1,080 ks. of rice per decare. p.20.
    KOOPERATIVNO ZEMEDELIE, Sofyia, Vol. 11, no. 3, Mar. 1956.

SO: Monthly List of East European Accessions, (EEAK),LC, Vol. 5, No. 6 June 1956, Uncl.

TODOROV, I.

Todorov, I. The labor collective of the Staiko Iv. Peev Enterprise is successfully
fulfilling the pledge made in answer to the appeal. p.41.

Vol. 4, no. 8, 1955   LEKA PROMISHLENOST   Sofiya, Bulgaria

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 2
     February, 1956

TODOROV, I.

TECHNOLOGY

Periodicals: ELEKTROENERGIIA. Vol. 9, No. 8, Aug. 1958.

TODOROV, I. Losses of heat in the use of diesel engines at diesel-electric stations
and possibilities for its utilization. p. 20.

Monthly List of East European Accessions (EEAI) LC Vol. 8, No. 4, April 1959,
Unclass.

TODOROV, Iv.

New method of fitting of a plastmass crown in a single sitting.
Stomatologiia, Sofia no.4:253-255 1954.

1. Iz Okruzhnata stomatologichna poliklinika, Sofia.
   (CROWN AND BRIDGEWORK,
      plastmass, single stage fitting)

TODOROVA, A.,; TODOROV, Ios.

Considerations on amebic dysentery in Bulgaria. I. Experience
with laboratory diagnosis of Entamoeba histolytica. Suvrem. med.,
Sofia 5 no.4:34-41 1954.

1. Iz bakteriologichnata laboratoriia pri podelenie 20112-B.
        (AMEBIASIS, INTESTINAL, diagnosis,
            laboratory technics)

RACHEV, L.,prof.; TODOROV, I.; STATEVA, St.; ANTOVA, V.

Certain biochemical indexes in infant toxicosis. Suvrem. med.,
Sofia 5 no.7:3-9 1954.

1. Iz Klinikata po detski bolesti pri Med. akademii V.Chervenkov,
Sofiia (direktor: prof. L.Rachev)
        (INFANT NUTRITION DISORDERS,
            toxicosis, metab. in)

KOLAROV, St.; TODOROV, Ior.

Clinical significance of laboratory investigations in hepatitis in children. Suvrem. med., Sofia 5 no.7:44-57 1954.

1. Iz Klinikata po detski bolesti pri Med. akademiia V. Chervenkov (Zav. katedrata: prof. L. Rachev)
        (HEPATITIS, INFECTIOUS, in infant and child,
             laboratory investigations in)

TODOROV, Iordan

Paper filtration ultramethod of electrophoretic fractionation of
serum proteins. Suvrem.med.,Sofia. 5 no.10:99-103 1954.

1. Iz Katedrata po detski bolesti pri Med. akademiia Vulko Cher-
venkov (direktor: prof. L. Rachev)
        (BLOOD PROTEINS, determination,
           electrophoresis, ultramicromethod)
        (ELECTROPHORESIS,
           of blood proteins, ultramicromethod)

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Nomography in color index. Suvrem.med., Sofia 6 no.2:85-89 1955.

1. Iz Klinikata po detski bolesti pri Visshiia med. institut
V.Chervenkov - Sofia   (direktor: prof. L.Rachev)
       (HEMOGLOBIN, determination,
          color index, nomography)

TODOROV, I.T.; ROMANOV, M.G.

Case of elliptocytosis. Suvrem.med.,Sofia 6 no.5:97-102 1955.

1. ^{I}z detskata klinika pri Visshiia meditsinski institut V.
Chervenkov-Sofiia (zav.katedrata: prof.L. Rachev), i I detska
gradska bolnitsa-Sofiia (gl.lekar: B. Boiuklieva)
        (ANEMIA,
            alliptocytosis, case report)

TODOROV, I.; KARAKASHEV, At.

Universal chamber for paper electrophoresis. Suvrem. med., Sofia
7 no.6:78-83 1956.

1. Iz Katedrata po detski bolesti pri VMI - Sofiia (Zav. katedrata:
prof. L. Rachev).
      (ELECTROPHORESIS, apparatus and instruments,
          universal chamber for paper electrophoresis (Bul))

TODOROV, I.

TODOROV, I.; KARAKASHEV, At.

Filter paper electrophoresis of lipo- and glycoproteins in the blood. Suvrem. med., Sofia 7 no.6:84-88 1956.

1. Iz Katedrata po detski bolesti pri VMI - Sofiia.
(Zav. katedrata: Prof. L. Rachev).
    (BLOOD PROTEINS, determination,
        glycoproteins, electrophoresis (Bul))
    (LIPOPROTEINS, in blood,
        electrophoresis (Bul))

TODOROV, Ior.; DOCHEV, D.

Recent studies on blood coagulation. Suvrem. med., Sofia 8 no.10:123-129
1957.

1. Iz Tsentralnata klinichna laboratoriia--ISUL (zav. laboratoriiata: I
Todorov).
(BLOOD COAGULATION,
review (Bul))

TODORAN, Ioan, cercetator principal (Cluj)

Use of school telescopes for astronomical observations. Gaz mat
B 15 no.1:9-14 Ja '64.

BULGARIA

TODOROV, I., Dr, ODVS /not identified7, Burgas.

"Study of an Outbreak of Staphylococcus Poisoning as a Result of Consumption of Sheep Cheese"

Sofia, Veterinarna Sbirka, Vol 63, No 1, 1966, pp 13-15.

Abstract: Because of the extensive production of sheep cheese in Bulgaria, occasional contamination of the cheese with staphylococci and the enterotoxin formed by them is possible. Staphylococci present in the cheese disappear on the 60th day of storage and the enterotoxin becomes inactive on the 90th day. In 1963 in a village in the Burgas Region, cheese was distributed that was prepared from unpasteurized milk into which Staph. aureus got from suppurating udders of sheep. On consumption of the cheese, 28 persons were poisoned. A strain of Staph. aureus identical with that isolated from the feces of the hospitalized patients was present in the cheese and in samples taken from the sheep and the dairy, according to tests carried out at the Burgas Region Sanitary Epidemiological Station. The procedure used in identifying the strain is outlined. The toxicity of the enterotoxin was established in a biological test on kittens.

1/1

L   20363-66   T

ACC NR: AP6012039   SOURCE CODE: BU/0011/65/018/003/0199/0202

AUTHOR: Todorov, I.   36

ORG: Institute of Physics, BAN, Sofia; Joint Institute of Nuclear Research, Dubna

TITLE: Octuplet model formulation incorporating integral charges only

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 3, 1965, 199-202

TOPIC TAGS: charged particle, group theory

ABSTRACT: Octuplet model of unitary symmetry, which is very
successful in many ways, seems to have one weak point. Namely, numerous
representations of the $SU(3)$ group which serve as the basis of this model
do not correspond to real particle multiplets and even require the existence
of charges which are fractions of the electronic charge (quarks). The author
proposes the introduction of a new group $R(8; 3)$ whose set of unique
representations coincides exactly with the set of those $SU(3)$ representations
which correspond to integral values of the charge and hypercharge. He shows
that the factor group $SU(3)/Z_3$ is isomorphic to the group $R(8; 3)$ of orthogonal
transformations in the eight-dimensional space generated by the $D(1, 1)$
representation of the $SU(3)$ group, and discusses other properties of the new
group. This paper was presented by Academician Kh. Khristov on 28 October 1964.
Orig. art. has: 11 formulas and 1 table. [JPRS]

SUB CODE: 20, 12 / SUBM DATE: none / OTH REF: 003 / SOV REF: 004
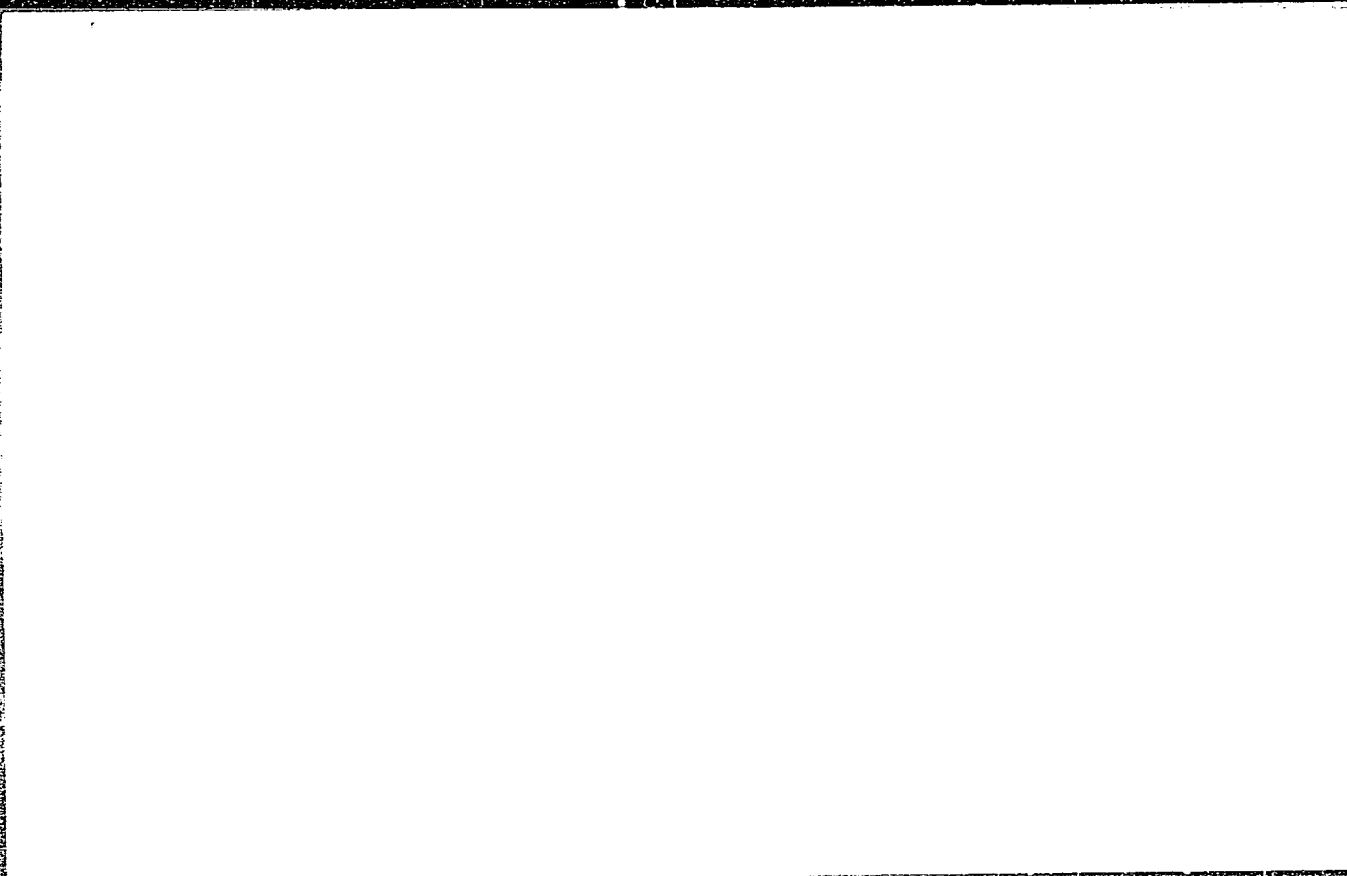
Card 1/1   vmb

RANGELOVA, St.; KRUSTEV, T.; VASILENKO, S.; TODOROV, I.

Studies on the effectiveness of live antityphoid vaccine in
Bulgaria. Suvr. med. 13 no.6:18-25 '62.

1. Iz Nauchno-izsledovatelskiia institut po epidemiologiia i
mikrobiologiia (Direktor Vl. Kalaidzhiev).
(TYPHOID PARATYPHOID VACCINES)

TODOROV, I.

Flow meters with automatic control for pressure and temperature. p. 33.

TEKHNIKA, SOFIIA, Bulgaria, Vol. 8, no. 3, 1959

10, Oct.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no./ 1959, Uncl.

TODOROV, I. ; SHELUDKO A.

On the process of removing dust in a closed space bound by dust-catching walls.
p. 121.

GODISHNIK. KHIMILA. Sofiia, Bulgaria, Vol. 50, No. 2, 1955/56 (published 1958)

Monthly List of East Accession (EEAI) LC, Vol. 9, No. 1 January 1960

Uncl.

TODOROV, I.

    Amending the Quality of Saggers Used in the Porcelain-Faience. Leka Promishlenost (Light Industry), #11:19: Nov 54

TODOROV, I.

    Reducing defects in porcelain and faience during the drying process. p. 21.
    LEKA PROMISHLENOST, Sofiya, Vol. 4, no. 3, 1955.

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4, no. 10, Oct. 1955,
     Uncl.

BULGARIA

TODOROV, Il.

Sofia, Farmatsiya,   No. 1, Jan-Feb 1963, pp 33-34

"Technicum for Assistant-Pharmacists in Varna."

(1)

TODOROV, I.N.

Certain age peculiarities of the effect of the hypophyseal somato-
tropic hormone on nucleic acid metabolism. Uch. zap KHGU 108:213-
225 '60.   (MIRA 14:3)

1. Kafedra fiziologii cheloveka i zhivotnykh Khar'kovskogo
gosudarstvennogo universiteta.
            (PITUITARY BODY)   (AGE)   (NUCLEIC ACIDS)

TODOROV, I.T.

Theory of representations and the classification of elementary
particles. Usp. mat. nauk 20 no.4:196-197   Jl-Ag '65.

(MIRA 18:8)

24.4500
24 (5)

67253

AUTHORS: Tavkhelidze, A. N., Todorov, I. T.,   SOV/20-129-4-15/68
              Chernikov, N. A.

TITLE: The Spectral Properties of the Green Function in a Model of
              the Meson Field With a Fixed Source

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 4, pp 769 - 772
              (USSR)

ABSTRACT: First, attention is briefly directed towards various models of
              the quantum field theory. If in Chew's model (Ref 3) the nucleon
              spin is not taken into account, and if meson energy is assumed
              not to depend on the momentum, the investigation of this model
              is reduced to the solution of a system of two ordinary differ-
              ential equations of second order. In the present article the
              properties of the Green function in such a simplified model are
              investigated. It is shown that, in the case of a rigorous treat-
              ment of the problem, no paradoxa of the type of "negative pro-
              babilities" occur. The Hamiltonian of the boson field with a
              fixed fermion source has the following form in the charge-sym-
              metric theory:

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The Spectral Properties of the Green Function in a   SOV/20-129-4-15/68
Model of the Meson Field With a Fixed Source

$$\mathcal{H} = M(\psi_p^+ \psi_p + \psi_n^+ \psi_n) + \sum_k \omega_k (A_k^+ A_k + B_k^+ B_k + C_k^+ C_k) -$$

$$- g_0 \sum_k R_k \left\{ (A_k + B_k^+) \psi_p^+ \psi_n + (A_k^+ + B_k) \psi_n^+ \psi_p + \frac{1}{\sqrt{2}} (C_k + C_k^+)(\psi_p^+ \psi_p - \right.$$

$$\left. - \psi_n^+ \psi_n \right\}.$$ Here A_k, B_k, and C_k (A_k^+, B_k^+, and C_k^+) denote the anni-
hilation operators (production operators) of the positive,
negative, and neutral mesons; ψ_p and ψ_n (ψ_p^+ and ψ_n^+) - the anni-
hilation operators (production operators) of the nucleons;
$\sqrt{2\omega_k} R_k$ - the form factor of the nucleons. The proton propaga-
tor may be written down in the form $S(t-t') =$

$$= i \langle 0 | T(\psi_{Hp}(t) \psi_{Hp}^+(t')) | 0 \rangle,$$ where $\psi_{Hp}(t)$ is an operator in

Heisenberg representation: $i \dfrac{d\psi_{Hp}(t)}{dt} = \psi_{Hp}(t)\mathcal{H} - \mathcal{H}\psi_{Hp}(t), \psi_{Hp}(0) =$

$= \psi_p$. The proton propagator may be written down in form of a

Card 2/4   scalar product. The operator of the nucleon number $\psi_p^+ \psi_p + \psi_n^+ \psi_n$

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The Spectral Properties of the Green Function in a   SOV/20-129-4-15/68
Model of the Meson Field With a Fixed Source

has four linearly independent eigenfunctions; two vacuum func-
tions, one one-nucleon function and one two-nucleon function.
Green's function of the proton satisfies the equation

$(E - \mathcal{H})g(E) = \bar{\phi}_0$, where $\bar{\phi}_0 = \psi_p^+ | 0 \rangle$ is the amplitude of state
with a mathematical proton. $\phi(t)$ is a solution of the modified

Schroedinger equation $i \frac{\partial \phi}{\partial t} = \mathcal{H}\phi + \bar{\phi}_0 \delta(t)$ with the condition

$\phi(t) = 0$, where $t < 0$. The authors then go over by means of an
orthogonal transformation to a new basis. The same transforma-
tion also occurs in the space spanned by the operators B_k and C_k.

The Hamiltonian just mentioned is then written down also in the

new basis. In this case $(E - H)G(E) = \bar{\phi}_0 \binom{1}{0}$ is obtained, where $\bar{\phi}_0$

denotes the vacuum Hamiltonian a+a + b+b + c+c. The authors then
go over in this equation to the Schroedinger variables. The homo-
geneous equation corresponding to the equation thus resulting
is the equation of motion of a particle with spin 1/2 in a
spherically-symmetric potential field and in a spherically-

Card 3/4

The Spectral Properties of the Green Function in a   672:3
Model of the Meson Field With a Fixed Source   SOV/20-129-4-15/68

symmetric magnetic field. The eigenvalue spectrum λ_n of the corresponding operator L is discrete. The amount of the eigenvalues E_n is limited towards lower values. Also if the neutral mesons are not considered the same result is obtained. It is further said that the authors thank Academician N. N. Bogolyubov for his interest in the present investigation and for his useful advice, and A. A. Logunov and D. V. Shirkov for useful discussions. There are 7 references, 2 of which are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute
               of Nuclear Research)

PRESENTED: June 29, 1959, by N. N. Bogolyubov, Academician

SUBMITTED: June 6, 1959

Card 4/4

BULGARIA/Human and Animal Morphology - Pathological Anatomy.   S

Abs Jour   : Ref Zhur Biol., No 5, 1959, 21641

Author   : Todorov Iv., Khristov Khr.
Inst   : —
Title   : Case of Giant-Cell Epulis in a Toothless Jaw

Orig Pub   : Stomatologiya, 1957, No 6, 349-352

Abstract   : No abstract.

Card 1/1

- 40 -

BULGARIA/Chemical Technology. Chemical Products and Their
        Application. Ceramics. Glass.Binding Materials.   H-13
        Concrete.

Abs Jour: Ref Zhur-Khim., No 2, 1959, 5434.

        In the case of simultaneous burning of bricks and
        tiles, it is necessary to make channels (from 3 to
        5 channels along the kiln axis) in the central part
        of the charge, which will make it possible to increase
        the speed of fire in the kilns. The presence of a good
        draft in kilns, as well as a uniform filling of fuel
        and correct distribution of zones along the kilns are
        of great importance in this case. Manufacturing of
        bricks with combustible additions and the pyrocatalytic
        method of burning proposed by Fefer /transliteration
        from Russian/ are promising. - V. Ryzhikov.

Card   : 2/2

                                54

TODOROV, I.

"Valuable rationalization measures in the clay industry."

p.8 (Ratsionalizatsiia, Vol. 7, no. 2, Feb. 1957, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

TODOROV, I.

"Let us prolong the working season for the building-ceramics industry."

p.13 (Stroitelstvo, Vol. 5, no. 3, 1958, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

TODOROV, I.; TSEKOV, K.; BURNEV, D.

"Improving the quality and decreasing the manufacturing cost of ceramic building materials."

p.23 (Leka Promishlenost, Vol. 7, no. 2, 1958, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

TODOROV, I.

"Correcting the readings of steam meters in the changes of the parameters of the steam."

p. 23 (Elektroenergiia, Vol. 9, no.1, 1958, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 9,
September 1958

Todorov, I. A.

AUTHORS: Krupatkin, I. L., and Todorov, I. A.   79-11-2/56

TITLE: An Investigation of the States of Equilibrium Between Phases in the
               System Pyramidon-Diethylamine-Water (Issledovaniye fazovykh ravnove=
               siy v sisteme piramidon-dietilamin-voda).

ABSTRACT: The properties of homogenization of the compounds forming in systems
               are hardly investigated, although they may be of practical importance
               in the selection of mixed solvents. It was not the system pyramidon-
               salicylic acid-water as in the preceding investigation which was ta=
               ken here, but the new system pyramidon-diethylamine-water, where the
               presence of the dissociated compound could be determined in the pre=
               vailing system pyramidon-diethylamine. This compound and the two doub=
               le systems separating in layers permit the assumption that two indi=
               vidual domains of the separation of layers exist in the triple system
               selected. The double system pyramidon-diethylamine was investigated
               with regard to fusibility. An incongruently melting compound was de=
               termined in this system. The system pyramidon-diethylamine-water was
               investigated regarding the separation of layers and the fusibility.
               The diagram of the state of the triple system indicates two indivi=
               dual surfaces of the separation of layers, with lower critical points.

Card 1/2

An Investigation of the States of Equilibrium Between Phases in the   79-11-2/56
System Pyramidon-Diethylamine-Water.

This kind of equilibrium between the liquid phases depends on the
strongly homogenized qualities of the compound of the prevailing
double system which are connected with the dissociation in the third
component, water. The contact section (kasaniye) and the point of
contact for low critical temperatures were found at the surface of
the separation of layers on the double system.
There are 4 figures, 1 table, and 6 Slavic references.

ASSOCIATION: Cherkassy State Pedagogical Institute (Cherkasskiy gosudarstvennyy
              pedagogicheskiy institut);

SUBMITTED: November 17, 1956.

AVAILABLE: Library of Congress.

              1. Pyramidon-Diethylamine-Water system-Phase studies
              2. Chemical equilibrium-Analysis

Card 2/2

AUTHORS: Krupatkin, I.L., Todorov, I.A.   153 58-1-4/29

TITLE: The Kinetics of the Separation Into Layers of Liquids in Systems
With Maximum Critical Points (Kinetika rasslaivaniya zhidkostey
v sistemakh s verkhnimi kriticheskimi tochkami)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya
tekhnologiya, 1958, Nr 1, pp. 20-27 (USSR)

ABSTRACT: On the strength of kinetic and microphotographical investigations
of the decay of liquid solutions and of the study of the equi-
librium of liquid phases one of the authors (Ref 1,2) already at
an earlier date worked out a theory of the mechanism of the sepa-
ration into layers of liquids. This theory provides for three
stages of separation. In order to extend the applicability of
this theory the authors investigated the kinetics of the separa-
tion into layers of liquids in the system n-nitrophenol - water
with stable separation into layers. It was shown that the laws
and rules governing kinetics confirm the correctness of the sug-
gested theory of the mechanism of the separation of liquids into
layers. Furthermore, the kinetics of the separation of liquids

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The Kinetics of the Separation Into Layers of Liquids   153-58-1-4/29
in Systems With Maximum Critical Points

into layers was investigated in the system salicylic acid -
water with a metastable separation of liquids into layers. It
was possible to prove that the kinetics of metastable separation
into layers is governed by the same laws as stable separation.
There are 4 figures, 4 tables, and 6 references, 4 of which are
Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut. Kafedra
neorganicheskoy khimii (Ivanovo Chemical-Technological Institute.
Chair of Inorganic Chemistry)

SUBMITTED: September 7, 1957

Card 2/2

SOV/156-58-2-28/42

AUTHORS: Chuyko, V. T., Mamenko, A. U., Todorov, I. A.

TITLE: Concentration of Bismuth-Traces From Metallic-Salt Solutions by Means of Partial Precipitation of the Macro-Component as Phosphate (Kontsentrirovaniye sledov vismuta iz rastvorov soley metallov putem chastichnogo osazhdeniya makrokomponenta v vide fosfata)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 317-319 (USSR)

ABSTRACT: The determination of bismuth-traces in metals where they often are an undesirable impurity, is usually carried out according to the concentration by means of carrying down the salts of these metals into the deposit of the solution. Ferric hydroxide, manganese dioxide, metallic sulfides and others are used as bismuth-collectors (Ref 1). The use of these collectors involves either the separation of bismuth from the collector or a regulation of the pH-value of the solution. It is aim... ... concentrate bismuth - as indicated in the circle - ... **small quantities of the macrocomponent do not prevent the photometric separation of bismuth.** ...es. It follows from a comparison

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SOV/156-58-2-28/48

. Concentration of Bismuth-Traces From Metallic-Salt Solutions by Means of
Partial Precipitation of the Macro-Component as Phosphate

of the methods described in   references 4, 5, and 6 that a
quantitative co-precipitation of bismuth can be obtained with
a partial precipitation of copper: a) by increasing the share
of the macro-component in the deposit; b) by means of fraction-
ation; c) by increasing the relation between the L_p-values of

both the macro- and micro-component; a suitable precipitator
must be selected for this purpose. The authors selected the
last method c) and used sodium phosphate for this purpose. More-
over, they partially precipitated the macro-component from the
concentrate in order to reduce its quantity in the deposit.
Bismuth was photometrically recorded as a complex compound with
thiourea. The tests have shown that the co-precipitation of
bismuth is in the same way effective when precipitating the
macro-component as phosphate or by introducing it readily pre-
pared. The extraction of bismuth from solutions by means of
prepared metallic phosphate deposits can be used for purifying
the salts of the same metals of bismuth-impurities. The above
bismuth-concentration was used by the authors for isolating
copper, magnesium, and mixtures of copper and zinc from salt
solutions. Bismuth apparently can be concentrated in the same

Card 2/3

SOV/ 156-58-2-2...

Concentration of Bismuth-Traces From Metallic-Salt Solutions by Means of
Partial Precipitation of the Macro-Component as Phosphate

        way from salt solutions of other metals which form phosphates
        of low solubility. There are 1 table and 7 references, o of
        which are Soviet.

ASSOCIATION: Kafedra obshchey i analiticheskoy khimii Cherkasskogo peda-
        gogicheskogo instituta im. 300-letiya vossoyedineniya Ukrainy
        s Rossiyey (Chair of General and Analytical Chemistry of the
        Cherkassy Institute of Pedagogics imeni on the Occasion of the
        Tercentenary of the Reunion of the Ukraine With Russia)

SUBMITTED: November 8, 1957

Card 3/3

5(2)

AUTHORS: Krupatkin, I. L., Todorov, I. A.   SOV/153-58-3-3/30

TITLE: The Kinetics of Separation Into Layers in Systems With Lower
                Critical Points (Kinetika rasslaivaniya zhidkostey v
                sistemakh s nizhnimi kriticheskimi tochkami)

ABSTRACT: The theory of the mechanism of the process under review was
                elaborated in systems with upper critical points (Refs 1, 2).
                It may be assumed that it is applicable also to systems with
                lower critical points (Ref 3). An experimental proof,
                however, is required by the assumption that the latter
                systems do not differ in principle from the first ones in
                a particular phase equilibrium. That proof was the objective
                of this paper. Therefore the kinetics mentioned in the title
                was studied at l o w e r   s t a b l e and l o w e r
                m e t a s t a b l e critical points, i.e. in 2 kinds of
                systems of this type. The system of phenol-o-phosphoric
                acid was chosen because it is a double system with a stable
                lower critical point, and has already been investigated as
                to the separation into layers (Ref 4). Pyramidon and water

Card 1/4

The Kinetics of Separation Into Layers in Systems   SOV/153-58-3-3/30
With Lower Critical Points

served as a double system with a metastable lower critical
point (Ref 5). The results obtained for phenol-o-phosphoric
acid are given in table 1, figure 1 and curve 1. The kinetics
mentioned in the title for the system pyramidon and water is
presented in table 3 and figure 3. For comparison, figure 1
gives the curve of the separation into layers (P_a) of the

systems investigated with a lower critical point K. The
dependence of the linear rate of extension of the separation
into layers on the superheating was studied in the same
mixtures (80.58% and 49.96% o-phosphoric acid) (Table 1,
Fig 1, Curve 2). The latter curve is qualitatively very
similar to curve 1 and has a distinctly marked maximum. The
velocity mentioned increases by about the tenfold in the
transition from 80.58 to 49.96% o-phosphoric acid. On super-
heating in a mixture that nearly corresponds to the critical
point, the velocity mentioned is 3.5 times higher than that
to be found in mixtures which are near the edges of the
binodal surfaces. Figure 1 shows that superheating rapidly
increases the linear rate of extension (up to the 14-fold).

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The Kinetics of Separation Into Layers in Systems   SOV/153-58-3-3/10
With Lower Critical Points

           Table 2 and figure 2 give the duration of the stratifica-
tion of the phases in dependence on the concentration of the
components in the whole concentration range below the strati-
fication curve.
C o n c l u s i o n s: In the systems mentioned: a) with
a stable stratification into layers and a lower critical
dissolution temperature, and b) with a metastable equilibrium
between the liquid phases and a lower critical point it was
proved that the kinetics of the stratification into layers
in systems with lower critical points obey the same laws as
in systems with upper critical points. Thus it is confirmed
that in both systems the phenomenon of the separation into
layers takes place according to the same mechanism. Thus
the theory of the mechanism of the separation into layers
is fully applicable to systems with lower critical points
both in stable and metastable state. There are 4 figures,
4 tables, and 5 Soviet references.

Card 3/4

The Kinetics of Separation Into Layers in Systems   SOV/153-58-3-3/3 0
With Lower Critical Points

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut (Ivanovo Institute of
                Chemical Technology) Kafedra neorganicheskoy khimii (Chair
                of Inorganic Chemistry)

SUBMITTED: September 3, 1957

Card 4/4

AUTHORS: Chuyko, V. T., Todorov, I. A.   SOV/156-58-3-22/53

TITLE: The Concentration by Co-Precipitation of the Impurities of
           Arsenic and Phosphorus in Depositions (Kontsentrirovaniye
           primesey mysh'yaka i fosfora uvlecheniyem v osadok)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya
           tekhnologiya, 1958, Nr 3, pp. 495 - 497 (USSR)

ABSTRACT: The possibility of the concentration of arsenic and phosphorus
           in depositions from solutions of zinc and magnesium salts was
           shown experimentally. It was found that the carrying-down of
           microcomponents in the deposition amounts to almost 90%. By
           means of this method it is possible to concentrate arsenic and
           phosphorus from highly diluted solutions (dilution $1:10^9$). The
           carrying-down of the microcomponents arsenic and phosphorus
           remains the same when instead of a partial precipitation of the
           zinc and magnesium salts of the sample investigated newly pre-
           cipitated zinc or magnesium oxide is added. The mechanism of
           the carrying-down of these arsenate and phosphate microcomponents
           is one of adsorption. There are 2 tables and 1 reference,
Card 1/2   which is Soviet.

The Concentration by Co-Precipitation of the   SOV/156-58-3-22/53
Impurities of Arsenic and Phosphorus in Depositions

ASSOCIATION: Kafedra khimii Cherkasskogo gosudarstvennogo
              instituta im.300-letiya vossoyedineniya Ukrainy s Rossiyey
              (Chair of Chemistry at Cherkassy State University imeni 300
              Years Unification of the Ukraine With Russia)

SUBMITTED: November 4, 1957

Card 2/2

CHUYKO, V.T.; TODOROV, I.A.

Concentrating vanadium traces by coprecipitation with metal hydroxides.
Izv.vys.ucheb.zav.; khim.i khim.tekh. 3 no.6:988-990 '60.
(MIRA 14:4)

1. Ternopol'skiy meditsinskiy institut i Cherkasskiy pedagogicheskiy
institut.
(Vanadium—Analysis)

·17(15)   SOV/21-59-9-25/25

AUTHOR: Todorov, I.N.

TITLE: Effect of the Somatotropic Hormone of the Hypophysis
               (STN) on the Phosphorus Fraction Content in the
               Albino Rat Liver in Ontogenesis

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, Nr 9,
               1959, pp 1037-1041 (USSR)

ABSTRACT: This article covers the results of experiments con-
               ducted by the author to study the effect of single
               and prolonged injections of STH on the content of
               basic phosphorus fractions in the livers of albino
               rats of various ages. The crystalline preparation
               of the hormone of growth has been obtained according
               to a method of Wilhelmi /Ref 7_7. The standardiza-
               tion of STH was based on the method described by Choh
               Hao Li /Ref 8_7. Table Nr 1 shows the concentration
               rate of the basic phosphorus fractions in the liver
               tissue in normal albino rats and rats injected with
Card 1/4   STH during a period of 24 hours after injection.

SOV/21-59-9-25/25

Effect of the Somatotropic Hormone of the Hypophysis (STN) on the
Phosphorus Fraction Content in the Albino Rat Liver in Ontogenesis

A distinct decrease in the RNA concentration within
24 hours after injection was observed in 1-month-old
animals, and does not change in 18-month-old ones.
No distinct changes in the lipoid acid-soluble phos-
phorus being under the effect of STH were observed
in all investigated age-groups of animals. The results
of investigating the effect of STH on the concentra-
tion of the bacis phosphorus fractions on the 8th
day of the injection period as shown in table Nr 2.
The STH calls forth a credible increase of RNA phos-
phorus concentration in animals of all age groups;
the substantiality of this increase increases with the
age of the animals. Thus, in 20-month-old rats, the
increase is 2 times higher than in rats 3 months old.
The considerable duration of experiments of the se-
cond series presented the possibility to determine
the content of the basic phosphorus fractions in the
whole liver of each experimental animal. As seen in
table Nr 3, the tendencies of changes in RNA and DNA

Card 2/4

SOV/21-59-9-25/25
Effect of the Somatotropic Hormone of the Hypophysis (STH) on the
Phosphorus Fraction Content in the Albino Rat Liver in Ontogenesis

fractions in the whole organ are the same as the ten-
dencies for concentration of the same substances
in the tissue of the organ. No distinct regularity
was noted in the changes in the acid-soluble phos-
phorus content. By the end of the period of inject-
ions, STH induces an increase in the RNA content at
all ages (except one month). The obtained results
permit the assertion that qualitative differences
exist in the action of STH on the nucleic acid meta-
bolism in animals of various ages. There are 5
tables and 10 references, 8 of which are English,
1 German and 1 Soviet.

ASSOCIATION: Kharkivs'kyy derzhavnyy universytet im. O.M. Gor'koho
Card 3/4   (Khar'kov State University im. A.M. Gor'kiy)

TODOROV, I.N. [Tdorov, I.M.]; BLOK, L.N. [Blok, L.M.]

Effect of ribonucleic acid from the bovine hypophysis on some aspects of hormone production in the adenohypophysis of white rats. Dop. AN URSR no.10:1331-1334 '64.   (MIRA 17:12)

1. Institut radiofiziki i elektroniki AN UkrSSR i Khar'kovskiy institut meditsinskoy radiologii. Predstavleno akademikom AN UkrSSR R.Ye. Kavetskim [Kavets'kyi, R.IE.].

TODOROV, I.N.

Some age characteristics of the effect of the somatotropic hormone
of the pituitary body on nucleic acid metabolism. Biokhimiia 24
no.6:1010-1019 N-D '59.   (MIRA 13:5)

1. Chair of Human and Animal Physiology, the State University,
Kharkov.
          (SOMATOTROPIN pharmacol.)
          (NUCLEIC ACIDS metab.)
          (LIVER pharmacol.)
          (AGING eff.)

TODOROV, I. N., Cand Biol Sci -- (diss) "Some growth characteristics in the action of somatotropic hormone of hypophysis on the metabolism of nucleic acids." Khar'kov, 1960. 22 pp; (Khar'kov Order of Labor Red Banner State Univ im A. M. Gor'kiy, Biological Faculty); 150 copies; free; (KL, 23-60, 122)

AUTHOR: Todorov, I. N.

TOPIC: net, hypophysis, secondary x and, bremsstrahlung.

accelerator (maximum radiation intensity 3.5 Mev, effective maximum
0.6 Mev, dose rate 500 r/min) to determine their effect on hypophysis

MALEYEV, V.Ya.; TODOROV, I.N.

Principal possibility for determining nucleotide sequence in poly-
nucleotide according to its vibration spectrum. Biofizika 10 no.2:
221-225 '65.   (MIRA 18:7)

1. Institut radiofiziki i elektroniki AN UkrSSR, Khar'kov.

L 13964-66   EWA(j)/EWT(m)/EWA(b)-2   GS/JXT/RM
ACC NR: AT6003456   SOURCE CODE: UR/0000/65/000/000/0083/0093

AUTHOR: Maleyev, V. Ya.; Todorov, I. N.; Kashpur, V. A.

ORG: none

TITLE: An electrical analog for associated vibrations in nucleic acid and the problem of determining the nucleotide sequence

SOURCE: AN UkrSSR. Issledovaniya po bionike (Research in bionics). Kiev, Naukova dumka, 1965, 83-93

TOPIC TAGS: nucleic acid, electric analog, bionics, polymer, vibration spectrum

ABSTRACT: The authors consider the theoretical possibility of determining the nucleotide sequence in a nucleic acid from its vibrational spectrum. A mechanical model of a polynucleotide is proposed as a first approximation in which the polymer is linear with the least rigid bonds between the separate monomers (nucleotides). This model reflects several of the properties of the primary structure in nucleic acids. Associated vibrations are analyzed in a linear chain of n rigid nucleotides with masses $M, m_1, \ldots, m_{n-1}$ connected by uniform elastic threads of rigidity k.

Card 1/2

L 13964-66
ACC NR: AT6003456

Longitudinal oscillations are considered in which the displacement vectors of all masses are parallel to the axis of the molecule. The frequencies of oscillations in this system are assumed to be known and an electrical analog of the model is used as a basis for demonstrating how these data may be used for determining the order of the monomer sequence. The proposed method is illustrated by application to an electrical polymer model consisting of a nonuniform LC ladder network. The results show complete agreement in every case with the known sequence of monomers in nucleic acid chains. Orig. art. has: 2 figures, 3 tables, 22 formulas.

SUB CODE: 06,09/ SUBM DATE: 25Aug65/ ORIG REF: 005/ OTH REF: 005

Card 2/2

TODOROV, I.N.

Changes in the concentration of nucleic acids in the hypophyseal
tissue of white rats irradiated by bremsstrahlung of linear
accelerator with complex spectrum. Radiobiologiia 5 no.2:186-
189 '65.   (MIRA 18:12)

1. Nauchno-issledovatel'skiy institut meditsinskoy radiologii,
Khar'kov.

21(7)
AUTHOR: Todorov, I.T.   SOV/155-58-5-23/37

TITLE: Dispersion Relations for Virtual Photo Generation of Several
                Bose Particles

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye
                nauki,1958,Nr 5,pp 131 - 138 (USSR)

ABSTRACT: The author sets up the dispersion relations for processes of
                the type
                        $N + e \rightarrow N + e + a + b$,

                where a and b are either π-mesons or γ-quanta. With the
                method of Logunov [Ref 1] the author reduces the problem
                to the determination of the dispersion relations for the
                process $N + v \rightarrow N + a + b$, where v is a certain virtual
                photon. Similar problems have been investigated in [Ref 2,3,4]
                The kinematics of the considered processes is considered in
                the general case. Finally the author shows how it is possible
                to generalize the proof in [Ref 4] of the dispersion re-
                lations for non-elastic processes to the present case.

Card 1/2

Dispersion Relations for Virtual Photo Generation   SOV/155-58-5-23/37
of Several Bose Particles

    Tavkhelidze is mentioned in the paper. The author thanks
    A.A. Logunov for the guidance of the paper.
    There are 7 references, 5 of which are Soviet, 1 English,
    and 1 Italian.

ASSOCIATION: Ob"yedinenyy institut yadernykh issledovaniy (United Institute
    for Nuclear Research)

SUBMITTED: September 6, 1958

Card 2/2

BULGARIA/Theoretical Physics - Classic Electrodynamics. Classic Field B-3
       Theory

Abs Jour : Ref Zhur - Fizika, No 3, 1959, No 4856

Author : Kalitzin Nikola St., Todorov Ivan
Inst : Physics Institute, Bulgarian Academy of Sciences
Title : Investigation of the Possibility of Representation of a
       Photon with the Aid of an Electromagnetic Model.

Orig Pub : Dokl. Bolg. AN, 1958, 11, No 1, 13-16

Abstract : It is assumed that the photon can be described with the aid
       of a Maxwell's equations, and the current vector entering
       into these equations corresponds to electric charges moving
       with the velocity of light. A regular solution of these
       equations is found and this solution is investigated. --
       G.A. Zaytsev

Card : 1/1

TODOROV, I. T., Cand Phys-Math Sci -- (diss) "Theory of dispersion relations for inelastic processes." /Dubna, Publishing department, 1960/. 10 pp; (Joint Inst of Nuclear Research, Laboratory of Theoretical Physics); 160 copies; price not given; printed on duplicating machine; bibliography at end of text (13 entries); (KL, 17-60, 140)

TODOROV, I.T. (Bolgariya)

A uniqueness theorem for the wave equation; commenting on the discussion of V.A. Fok - F.I. Frankl'. Usp.mat.nauk 13 no.2:211-213 Mr-Ap '58.

(MIRA 11:4)

(Differential equations, Partial)

AUTHOR: Todorov, I.T., Zidarov, D.   SOV/20-120-2-10/63

TITLE: On the Unique Determination of the Form of the Attracting Body
             by the Values of its Outer Potential (O yedinstvennosti
             opredeleniya formy prityagivayushchego tela po znacheniyam yego
             vneshnego potentsiala)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 120, Nr 2, pp 262-264 (USSR)

ABSTRACT: Let T_1 and T_2 be bodies of the same constant density with the
             surfaces S_1 and S_2. Let S^i_α ($\alpha = 1,2$) denote the part of S_α
             lying in the interior of $\overline{T_1 \cup T_2}$; let $S^i = S^i_1 \cup S^i_2$. Let S^1 be
             the contour of the body $\overline{T}_1 \cup \overline{T}_2$ and $S^1_\alpha = S^1 \cap S_\alpha$. Let the
             surfaces S be piecewise smooth and the surfaces S^1_α be of
             positive measure.

             Theorem: Let $\vec{R}$ be the radius vector with the origin in 0, ν - vector
             of the outer normal to S_α, $|\nu| = 1$, dS element of area of S_α.
             If there exists a point 0 so that

$$\int_{S^i} |(\vec{R}, \nu)| \, dS \leq \int_{S^1} |(\vec{R}, \nu)| \, dS$$

Card 1/2

SOV

On the Unique Determination of the Form of the Attracting Body /20-120-2-10/63
by the Values of its Outer Potential

is valid, then the bodies T_{α} are identical if they generate

the same outer potentials outside of $\overline{T}_1$ and $\overline{T}_2$.

Theorem: Let the z-axis of the rectangular system x,y,z be
chosen so that

$$\int_{S^i} |(\nu_z, \nu)|\, dS \leq \int_{S^1} |(\nu_z, \nu)|\, dS,$$

where ν_z denotes the unit vector of the z-axis. If the bodies T_{α}

outside of $\overline{T_1 \cup T_2}$ generate the same potentials, then they are

identical.

The proofs are based on the method of Novikov /Ref 1/ and
Sretenskiy /Ref 2/ .

There are 3 Soviet references.

ASSOCIATION: Fizicheskiy institut Bolgarskoy Akademii nauk (Physics Institute
of the Bulgarian Academy of Sciences)
PRESENTED: January 14, 1958, by S.L.Sobolev, Academician
SUBMITTED: December 11, 1957

Card 2/2   1. Mathematics--Theory

LOGUNOV, A. A. and TODOROV, I. T.

"On the Proof of Dispersion Ralations for Inelastic Scattering."
Nuclear Physics, Vol. 10, No. 5, 1959, 552-563 (No. Holland Publ. Co, Amsterdam)

A derivation of Dispersion Relations for the inelastic process
$(p+\pi \rightarrow p'+\pi'+\pi'')$ is presented based on a theorem of analytic continuation.
The one-nucleon terms are correlated with the amplitudes of simpler precesses.

Lab. Theoretical Physics, Joint Inst. Nuclear Research, Dubna, USSR

L 24243-66   EWT(1)

ACC NR: AP6005465   SOURCE CODE: UR/0053/66/088/001/0051/0091

                                                                        31

AUTHOR: Logunov, A. A.; Nguyen Van Kh"yeu; Todorov, I. T.   B

ORG: Institute of High-Energy Physics (Institut fiziki vysokikh energiy); Joint
Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Asymptotic relations between the scattering amplitudes in local field theory

SOURCE: Uspekhi fizicheskikh nauk, v. 88, no. 1, 1966, 51-91

TOPIC TAGS: quantum field theory, asymptotic property, scattering amplitude, strong
nuclear interaction, scattering cross section, particle production, differential cross
section, meson, baryon, fermion, photoproduction, Compton effect

ABSTRACT: This is a review article devoted to the derivation of rigorous asymptotic
relations between the scattering amplitudes in high-energy interactions and the re-
sultant relations between such characteristics as cross sections, polarizations, and
others, from the point of view of their agreement with the most recent experimental
data. Special attention is paid to the hypotheses on whose basis the asymptotic re-
lations are derived. The authors review systematically the asymptotic relations de-
rived by many earlier investigators, as well as related papers dealing with the de-
rivation of asymptotic relations in the presence of higher symmetries of strong inter-
actions and in processes involving particle production. The section headings are:
1. Estimated upper bounds of the growth of the cross section at high energies. 1.1.
Limitation imposed by the microcausality principle on amplitude growth. 1.2. Condi-
tions of polynomial boundedness of the causal amplitude of elastic scattering. 1.3.

Card 1/2   UDC: 539.12.01

L 24243-66

.ACC NR: AP6005465   O

Estimates of the growth of the cross sections. 2. Asymptotic properties of the scat-
tering amplitude of scalar particles. 2.1. The Phragmen-Lindelof theorem and asymp-
totic equality of differential cross sections. 2.2. Case of elastic scattering.
Equality of total cross sections. 3. Asymptotic properties of meson-baryon scatter-
ing. 3.1. Symmetry properties of the amplitude. 3.2. Asymptotic equality of differ-
ential cross sections. 3.3. Asymptotic relations between polarizations of fermions
in the final state. 3.4. The complete experiment in the case of elastic meson-nucleon
scattering. 4. Asymptotic properties of baryon-baryon scattering amplitudes. 4.1.
Symmetry properties of the amplitudes. 4.2. Asymptotic equality of the differential
cross sections. 4.3. Asymptotic properties of the polarization effects. 5. Asymptot-
ic properties of photoproduction and Compton-effect amplitudes. 5.1. Photoproduction
of mesons on baryons. 5.2. Compton effect. 6. Asymptotic relations between forward
elastic scattering amplitudes. 7. Higher symmetries of strong interactions and asymp-
totic relations between the amplitudes of meson-baryon scattering and photproduction.
7.1. Meson-baryon scattering and photoproduction in schemes with higher symmetries.
7.2. Higher symmetries and relations between amplitudes. 7.3. Asymptotic relations
for cross sections and polarizations. 8. Asymptotic relations between amplitudes of
processes with variable particle number. 8.1. Kinematics. 8.2. Properties of asymp-
totic amplitude. 8.3. Asymptotic equality of differential cross sections. 9. Asymp-
totic behavior of form factors. 10. Conclusion. Orig. art. has: 246 formulas and
1 table.

SUB CODE: 20/   ORIG REF: 023/   OTH REF: 032

Card 2/2dda Subn DATE: none

VLADIMIROV, Vasiliy Sergeyevic'; TODOROV, I.T., red.

[Methods in the theory of functions of several complex
variables] Metody teorii funktsii mnogikh kompleksnykh
peremennykh. Moskva, Nauka, 1964. 411 p.
(MIRA 17:10)

LOGUNOV, A.A.; NGUYEN VAN K'YEU; TODOROV, I.T.; KHRUSTALEV, O.A.

Asymptotic relations between cross sections in local field
theory. Zhur. eksp. i teor. fiz. 46 no.3:1079-1089 Mr'64.

(MIRA 17:5)

1. Ob"yedinennyy institut yadernykh issledovaniy.

ACCESSION NR: AP4025941   S/0056/64/046/003/1079/1089

AUTHOR: Logunov, A. A.; Nguyen, Van Kh'yeu; Todorov, I. T.;
Khrustalev, O. A.

TITLE: Asymptotic relations between cross sections in local field
theory

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 46,
no. 3, 1964, 1079-1089

TOPIC TAGS: local field theory, cross section, asymptotic cross
section relations, Phragmen Lindelof theorem, Pomeranchuk theorem,
antiparticle, neutral pion scattering, kaon scattering, pion proton
scattering, kaon proton scattering

ABSTRACT: It is shown that, by starting from the Phragmen-Lindelof
theorem and using the general principles of relativistic local quan-
tum field theory, several asymptotic relations can be established

Card   1/4

ACCESSION NR: AP4025941

not only between the total cross sections of various processes but
also their differential cross sections. Starting with the related
processes of scattering of scalar particles

$$a_1 + b_1 \rightarrow a_2 + b_2 \qquad \text{(I)}$$

$$\bar{a}_2 + b_1 \rightarrow \bar{a}_1 + b_2 \qquad \text{(II)}$$

(the bar denotes the antiparticle), the asymptotic properties of the
scattering amplitude are derived under certain assumptions and, in
particular, the Pomeranchuk theorem is obtained for this case. The
method is then extended to include the case when the particles b have
spin 1/2 while the particles a have spin zero and to process which
are described in the e^2 approximation in terms of electromagnetic
form factors. All the deductions are based on the assumption that
the cross sections do not oscillate at high energies. It is con-

Card   2/4

ACCESSION NR: AP4025941

cluded that the differential cross sections of processes (I) and (II) are asymptotically equal, that the total cross sections of interaction of particles and antiparticles are equal if the forward elastic scattering amplitude does not grow too rapidly, that the forward differential scattering cross section is proportional to the square of the total cross section in the case of scattering of neutral pions or kaons by protons, and that the limiting values of the form factor are equal when the momentum transfer (t) becomes infinite. "In conclusion the authors are deeply grateful to N. N. Bogolyubov for interest in the work and for stimulating discussion, and also to S. M. Bilen'kiy, D. I. Blokhintsev, V. S. Vladimirov, M. A. Markov, N. N. Meyman, Kh. Ya. Khristov, and P. Suranyi for useful remarks." Orig. art. has: 43 formulas.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of Nuclear Research)

Card 3/4

LOGUNOV, A.A. (Dubna); LYU I-CHEN' [Liu I-ch'ên] (Dubna); TODOROV, I.T.
(Dubna); CHERNIKOV, N.A. (Dubna)

Dispersion relations and analytic properties of partial
amplitudes in perturbation theory. Ukr. mat. zhur. 15 no.3:
250-276 '63.   (MIRA 16:12)

LOGUNOV, A|A.; LIU I -CEN; [Liu I-ch'ên]; TODOROV, I.T,; CERNIKOV, N.A.

.Dispersion relations and the analytic properties of partial amplitudes in the pertubation theory. Analele mat 17 no.4:82-112 0-D '63.

LOGUNOV, A.A.; TODOROV, I.T.; CHERNIKOV, N.A.

Surface of singular points in the Feyman diagram. Godishnik
fiz mat 55 no.2:117-137 '60/'61 [publ. '62].

LYU I-CHEN' [Liu I-ch'en], TODOROV, I.T.

Integral representation of the vertex part in perturbation
theory. Dokl.AN SSSR 148 no.4:806-809 F '63.   (MIRA 16:4)

1. Ob"yedinennyy institut yadernykh issledovaniy. Predstavleno
akademikom N.N.Bogolyubovym.
                   (Pertubrations)   (Nuclear physics)

LYU I-CHÊN[Liu I-ch'ên]; TODOROV, I.T.

[Characteristics of some Feynman diagrams] Osobennosti nekotorykh diagramm Feinmana. Dubna, Ob"edinennyi in-t iadernykh issledovanii, 1963. 9 p.   (MIRA 16:6)
(Quantum electrodynamics)

MESTVIRISHVILI, M.A.; TODOROV, I.T.

Analytic properties of the meson-nucleon vertex portion and the
scattering amplitude of pseudoscalar mesons in the theory of
perturbations. Dokl. AN SSSR 148 no.3:562-565 Ja '63.

(MIRA 16:2)

1. Ob"yedinennyy institut yadernykh issledovaniy. Predstavleno
akademikom N.N. Bogolyubovym.

(Mesons—Scattering) (Perturbation)

LOGUNOV, A.A.; TODOROV, I.T.; CHERNIKOV, N.A.

Generalization of Symanzik's theorem on the majorization of
Feynman diagrams. Zhur.eksp. i teor. fiz. 42 no.5:1285-1293 My
'62.   (MIRA 15:9)

1. Ob"yedinennyy institut yadernykh issledovaniy.
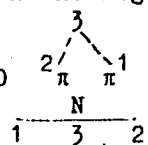   (Graphic methods) (Particles (Nuclear physics))

у

S/020/63/148/004/014/025
B102/B186

AUTHORS: Liu I-cheng, Todorov, I. T.

TITLE: ˙   Integral representation of the vertex part in perturbation
                theory

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 4, 1963, 806-809

TEXT: A. A. Logunov et al. (e. g. DAN 135, 801, 1960) have shown that the

graph D $\overset{3}{\underset{\substack{N \\ \overline{1\quad 3\quad 2}}}{\underset{2/\pi\quad \pi\backslash 1}{\diagup\backslash}}}$ majorates all strongly coupled graphs of the nucleon-

photon vertex part, i. e. in the space of external Euclidean momenta in
the region G_E

$$Q_D(\alpha, p^2) = \frac{\alpha_2\alpha_3 p_1^2 + \alpha_1\alpha_3 p_2^2 + \alpha_1\alpha_2 p_3^2}{\alpha_1 + \alpha_2 + \alpha_3} - (\alpha_1 + \alpha_2)m^2 - \alpha_3 M^2 < 0 \qquad (1).$$

Card 1/4

This result is now applied to (1) determining a region in the space of the complex variables $z_1 = p_1^2$, $z_2 = p_2^2$, $z_3 = p_3^2$ in which the contribution of any strongly coupled graph of the vertex part is analytical; (2) deriving an integral representation for an arbitrary graph which reflects completely the established analytical properties of the vertex part (N. Nakanishi Suppl. Progr. Theor. Phys., no. 18, 1, 1961). The integral representation is obtained as

$$F(z) = \int_0^1 \int_0^1 \int_0^1 d\eta_1 \, d\eta_2 \, d\eta_3 \int_{\rho_0(\eta)}^{\infty} d\rho \, \frac{f(\eta, \rho)}{\eta z - \rho + i\theta} \delta(1 - \eta_1 - \eta_2 - \eta_3), \qquad (11)$$

where

$$\rho_0(\eta) = \max_{z \in G} \eta z, \cdot \quad \eta z = \eta_1 z_1 + \eta_2 z_2 + \eta_3 z_3, \qquad (12)$$

$$\eta_i = [A_1(\alpha) + A_2(\alpha) + A_3(\alpha)]^{-1} A_i(\alpha), \quad i = 1, 2, 3;$$

$$\rho = \left[\sum_{i=1}^{3} A_i(\alpha) \right]^{-1} \sum_{\nu=1}^{l} \alpha_\nu m_\nu^2 \qquad (10).$$

Card 2/4

Integral representation of the vertex ...B102/B186

$f(\eta, \zeta)$ is a generalized weight function. These results can be used to obtain integral representations for scattering amplitudes. This is done for the case of NN scattering. With

$$s = (p_1 + p_3)^2 < 4M^2, \quad t = (p_1 + p_3)^2 < 4m^2, \quad u = (p_2 + p_3)^2 < 4m^2 \tag{16}$$

one obtains

$$T(s,t) = \int_0^1 d\alpha \left\{ \int_{4m^2}^\infty d\rho \, \frac{f_1(\alpha, \rho)}{\alpha t + (1-\alpha)u - \rho} + \int_{\rho_0(\alpha)}^\infty d\rho \left[\frac{f_2(\alpha, \rho)}{\alpha s + (1-\alpha)u - \rho} + \right. \right. \tag{17}$$

$$\left. \left. + \frac{f_3(\alpha, \rho)}{\alpha s + (1-\alpha)t - \rho} \right] \right\} ,$$

$$\rho_0(\alpha) = 4\{M^2\alpha + m^2(1-\alpha)\}. \tag{18}$$

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B102/B186

There is 1 figure.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

PRESENTED   August 14, 1962 by N. N. Bogolyubov, Academician

SUBMITTED: August 2. 1962

Card 4/4

AUTHORS: Mestvirishvili, M. A., Todorov, I. T.

TITLE: Analytical properties of the meson-nucleon vertex part and the scattering amplitudes of pseudoscalar mesons in perturbation theory

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 3, 1963, 562-565

TEXT: Using the method of Feynman graph majoration and taking the pseudoscalar behavior of pions into consideration, the authors determined the analytical regions of the primitive graphs for the meson-nucleon vertex part and of the meson-meson scattering amplitude. Theorem 1: All closely connected graphs of the pion-nucleon vertex part are majorated by the graphs
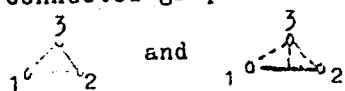
and . The rings indicate external nodes, thick lines refer to nucleons, dotted lines to pions. If $p_1^2 = p_2^2 = M^2$, the vertex function is analytical in respect of $z = p_3^2$ in the complex plane z cutting

Card 1/2

Analytical properties of the meson- ...   S/020/63/148/003/016/037
                                             B108/B180

the section from $9m^2$ (m - pion mass) to infinity from the real axis. This holds for any order of perturbation theory. Theorem 2: All closely connected pion-pion scattering graphs are majorated by the graph (___). If the external meson momenta satisfy the condition $p_i^2 - m^2$, then all closely connected graphs of pion-pion scattering will be analytical in the triangle $s = (p_1 + p_2)^2 < 4m^2$, $t = (p_1 + p_3)^2 < 4m^2$, $u = (p_1 + p_4)^2 \cdot 4m^2$ in the plane $s+t+u = 4m^2$. There are 3 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

PRESENTED: August 1, 1962, by N. N. Bogolyubov, Academician

SUBMITTED: June 30, 1962

Card 2/2

LYU I-CHEN' [liu I-ch'en]; TODOROV, I.T.; SARANTSEVA, V.R., tekhn. red.

[Integral representation of the vertex part in perturbation theory]Integral'noe predstavlenie vershinnoi chasti v teorii vozmushchenii. Dubna, Ob"edinennyi in-t iadernykh issl., 1962. 6 p.   (MIRA 15:10)
    (Quantum field theory)   (Perturbation)

LOGUNOV, A.A.; LYU I-CHEN'; TODOROV, I.T.; CHERNIKOV, N.A.;
SARANTSEVA, V.R., tekhn. red.

[Dispersion relations and analytic properties of partial
amplitudes in the perturbation theory]Dispersionnye sootno-
sheniia i analiticheskie svoistva partsial'nykh amplitud v
teorii vozmushchenii. Dubna, Ob"edinennyi in-t iadernykh
issl., 1962. 31 p.   (MIRA 15:10)
  (Mesons—Scattering) (Nucleons—Scattering)
                (Perturbation)

LOGUNOV, A. A., TODOROV, I. T. and CHERNIKOV, N. A.

"Analytical Properties of the Feynman Graphs"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Institute for Nuclear Research
Laboratory of Theoretical Physics, Dubna, 1962

AUTHORS: Logunov, A. A., Todorov, I. T., Chernikov, N. A.

TITLE: Generalization of Symanzik's theorem on majorization of
                 Feynman graphs

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
                 no. 5, 1962, 1285-1293

TEXT: In an earlier paper (DAN SSSR 135, 801, 1960) the authors showed
that a majorization method developed by them made it possible to reduce
the consideration of all strongly connected Feynman graphs of one process
to that of a finite number of graphs. Such a graph may be considered to
be strongly connected, if, upon one of the internal lines being broken,
it does not become dissociated, the square of the outer momenta being
regarded as independently variable. The set of classes R_0 of all diagrams
is sought in a maximum enclosed Euclidean area of outer momenta wherein
the Feynman integral does not display any singularities. For NN
scattering $R_0 = 7$, for the meson-meson scattering $R_0 = 3$, and for the meson-
nucleon scattering $R_0 = 14$. The method of determining class R_0 is discussed

Card 1/2

Generalization of Symanzik's ...

S/056/62/042/005/023/050
B102/B104

at length. For the purpose of comparing the diagrams of class R_0 a
detailed examination is made of the quadratic form of general Feynman
graphs and an explicit expression for this form is arrived at terms of the
identity matrix. This matrix with n rows and l columns then forms the
main characteristic of any graph having n nodes and l internal lines. An
expression is also derived for the conjugated (inverse) quadratic form.
Further, the minimum expressions are obtained for the Feynman parameters
(α) relating to the conjugated quadratic form and finally the results are
transferred to the Symanzik theorem of graph majorization, which is
thereby proved. The generalization of this theorem is discussed. The
results following from the particular and the generalized Symanzik theorem
are discussed for the special case of a NN scattering. It can be shown
that the set R_0 of the graphs for the NN scattering are majorized by the
two former (I, II, Fig. 1). All strongly connected graphs of the meson-
nucleon scattering can be majorized by the sum of the four graphs in Fig. 2.
There are two figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Insti-
               tute of Nuclear Research)
SUBMITTED: December 9, 1961
Card 2/4

3⁸⁹1⁴⁰

S/058/62/000/004/016/160
A058/A101

34.6600

AUTHOR: Todorov, I. T.

TITLE: Analytic properties of the amplitude of inelastic processes involving strange particles

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 39, abstract 4A306 ("Godishnik Sofiysk. un-t. Fiz.-matem. fak.", 1959 - 1960 (1961), v. 54, no. 2, 177 - 202)

TEXT: On the basis of the postulates of covariance, causality and spectrality (the assumption of the existence of a complete system of physical states with positive energies), the author examines the analytic properties of the amplitudes of K + N → π + Y and π + N → K + Y processes in which all four particles have different masses. He finds the kinematic characteristics of these processes in a reference system that is a natural generalization of Breit's system. He derives dispersion relations for imaginary meson masses. He gives a generalization of the theorem of V. S. Vladimirov and A. A. Logunov ("Izv. AN SSSR". Ser. matem., 1959, v. 23, 661) on the analyticity region of the anti-Hermitian part

Card 1/2

S/058/62/000/004/016/160
A058/A101

Analytic properties of the...

of scattering amplitude for the case when all the particles participating in the
reaction have different masses; he shows that the resultant analyticity region
contains not a single physical point.

[Abstracter's note: Complete translation]

Card 2/2

LOGUNOV, A.A.; TODOROV, I.T.; CHERNIKOV, N.A.; SARANTSEVA, V.P.,
tekhn. red.

[Surface of singular points of a Feynman diagram] Poverkhnost'
osobykh tochek diagrammy Feinmana. Dubna, Ob"edinennyi in-t
iadernykh issl., 1962. 29 p.   (MIRA 15:3)
                     (Quantum electrodynamics)

LOGUNOV, A.A.; TAVKHELIDZE, A.N.; TODOROV, I.T.; CHERNIKOV, N.A.

Majoration of Feinman's diagrams. Dokl. AN SSSR 135 no.4:801-804
'60.   (MIRA 13:11)

1. Ob"yedinennyy institut yadernykh issledovaniy. Predstavleno
akademikom N.N.Bogolyubovym.
               (MAthematical physics)

RANGELOVA, S.; KRASTEV, T.; VASSILENKO, S.; TODOROV, J.

Achievements in control of poliomyelitis in Bulgaria.   Dokl. bolg.
akad. nauk 15 no.6:673-676 '62.

1. Note presentee par I. Emanuilov, membre de l'Academie.
(POLIOMYELITIS)

BACALOVA, L.; TODOROV, J.; DAMYANOVA, M.

Studies of some serum enzyme activities in rachitic children.
Nauch. tr. Vissh med. inst. Sofiia 43 no.1:25-28 '64.

1. Chair of Pediatrics, (Director: Prof. L. Racev) and Chair of
Clinical Laboratory at the Postgraduate Medical Institute,
(Director: Prof. J. Todorov).