GOLEV, B.T. [Holiev, B.T.]

Paleogeography of the Eocene in the outer anticlinal zone
and Borislav subzone in the Carpathian piedmont fault. Pyt.
geol. no.9:20-29 '58.   (MIRA 13:4)
        (Carpathian Mountains--Paleogeography)

GOLEV, B.T.

Stratigraphy of Eocene sediments in Northern Bukovina and the
Pokutye. Izv. vys. ucheb. zav.; geol. i razv. 1 no.8:36-42 Ag
'58.   (MIRA 12:9)

1.L'vovskiy universitet im. Iv. Franko, Kafedra istoricheskoy
geologii i paleontologii.
          (Chernovtsy Province--Geology, Stratigraphic)
          (Pokutye--Geology, Stratigraphic)

VYALOV, O.S., akademik; GOLEV, B.T.

Classification of paleodictyon. Dokl.AN SSSR 134 no.1:175-178
S '60.   (MIRA 13:8)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut. 2. Akademiya
nauk USSR (for Vyalov).
                    (Paleontology)

. GOLEV, B.T.

Preparation and staining of nummulite tests. Vop.mikropaleont.
no.3:132-135 '60.   (MIRA 13:9)

1. L'vovskiy universitet, kafedra istoricheskoy geologii.
   (Nummulites)   (Micropaleontology)

GOLEV, B.T.; KHLOPONIN, K.L.

Nomenclature and distinctive characters of some granulated nummulites.
Vop. mikropaleont. no.4:104-120 '60.   (MIRA 14:5)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut, Moskva 1
Ukrainskiy nauchno-issledovatel'skiy geologo-razvedochnyy institut,
L'vov.
                        (Nummulites)

GOLEV, B.T.

Representatives of the genera Operculina and Neooperculinoides
from Eocene sediments of the Bukovina-Pokutye in the
Carpathians. Paleont.sbor. [Lvov] no.1:61-69 '61. (MIRA 15:9)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut, Moskva.
    (Carpatian Mountain region—Foraminifera, Fossil)

GOLEV, B.T.

      Genus Operculinoides Hanzawa. Vop. mikropaleont no.:112-120
      '61.   (MIRA 14:8)

    1. Vsesoyuznyy zaochnyy politekhnicheskiy institut, Moskva.
              (Foraminifera, Fossil)

GOLEV, B.T.

Possible presence of salt deposits in the Krasno zone of the
Carpathians. Izv.AN SSSR.Ser.geol. 26 no.7:105-110 Jl '61.

(MIRA 14:7)

1. L'vovskiy gosudarstvennyy universitet.
(Carpathian Mountains--Salt deposits)

GOLEV, B.T.

      Nummulites of the Eocene of southeastern Turkmenistan
      (Badkhyz) and their taxonomic position. Vop. mikropaleont.
      no.6:91-106 '62.   (MIRA 15:11)

      1. Vsesoyuznyy zaochnyy politekhnicheskiy institut,
    Moskva.
                  (Badkhyz--Nummulites)

GRLEV, M.F.

Taxonomic significance of some morphological characteristics of the representatives of the southern Dumontitinae. Trudy morph.ont. no.8:151-167 '64. (MIRA 18:5)

1. Universitet druzhby narodov imeni n.Lumumby.
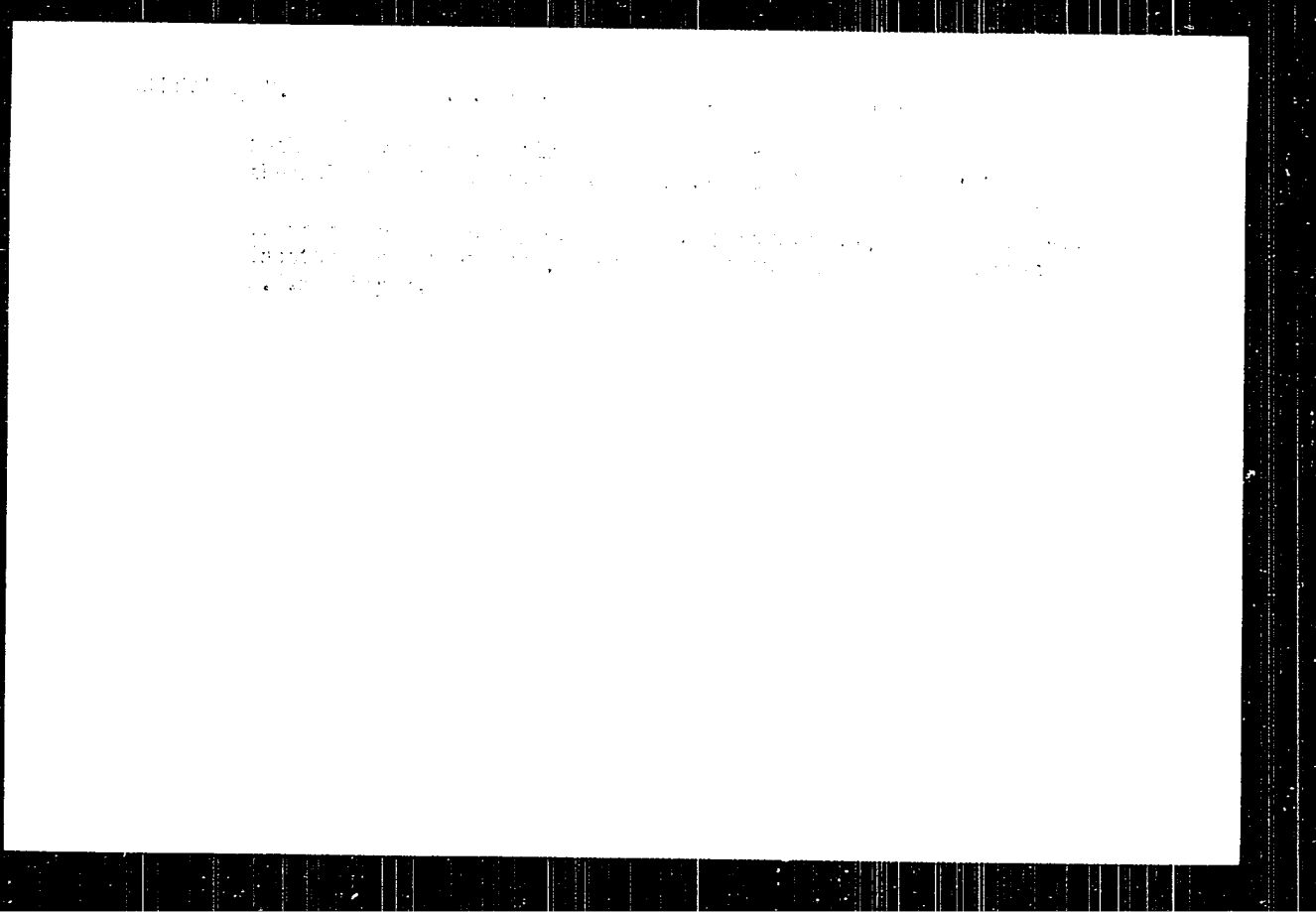
VYALOV, O.S.; GOLEV, B.T.

Paleodictyon of the Crimea. Izv. vys. ucheb. zav.; geol. i razv.
7 no.3:24-30 Mr '64.   (MIRA 18:3)

1. Institut geologii goryuchikh iskopayem. AN UkrSSR
i Universitet imeni imeni in. Lomonosov.

VYALOV, C.S.; GOLEV, B.T.

Detailed subdivision of Ialodictyonidae group. Biul. MOI, Otd.
geol. 40 no.2:93-114   Mr-Ap '65.   (MIRA 18:5)

GOLEV, I.F.

Single seeds in sugar beets. Agrobiologiia no.1:155-156 Ja-F
'62.   (MIRA 15:3)

1. Vserossiyskiy nauchno-issledovatel'skiy institut sakharnoy
svekly i sakhara, Ramon', Voronezhskaya oblast'.
                              (Sugar beets)

PHASE I BOOK EXPLOITATION   SOV/6390

Golev, Konstantin Vladimirovich

Raschet dal'nosti deystviya radiolokatsionnykh stantsiy (Calculation
    of Radar Range) Moscow, "Sovetskoye radio", 1962. 204 p.
    Errata slip inserted. 12,300 copies printed.

Ed.: T.M. Lyubimova; Tech. Ed.: V.V. Belyayeva.

PURPOSE: This book is intended for engineers and students of
    advanced courses in radio engineering schools of higher education.

COVERAGE: The theory and methods for the graphical solution of
    radar-range equations by means of point and other types of
    targets with or without external interference are discussed.
    General formulas and universal graphs for computation of operat-
    ing range under conditions of smooth and rough spherical earth
    surface effect are derived along with the probability character-
    istics of various types of signal detection. The author thanks
    V.A. Fok, P.A. Azrilyant, M.G. Belkina, T.V. Solov'yev,

Card 1/8

Calculation of Radar Range   SOV/6390

A.T. Potekhin and M.A. Yevdokimov for their cooperation. There are
103 references: 50 Soviet (6 translations), 52 English, and
1 French.

TABLE OF CONTENTS:

Card 2/8

S/536/60/000/047/001/002
D077/E135

AUTHOR: Golev, O.G., Engineer

TITLE: Influence of the design of components on the
             productivity and economics in cold-stamping operations

PERIODICAL: Moscow. Aviatsionnyy tekhnologicheskiy institut.
             Trudy. No. 47. Moscow, 1960. Nekotoryye voprosy
             tochnosti tekhnologii priborostroyeniya, pp. 56-59

TEXT: Some simple components that are frequently used in
instrument manufacture have been slightly redesigned to save
losses in material due to cut-offs and to increase productivity.
The changes are evident from the illustrations, Figs. 1, 2, and 3,
in which sketches б show the initial utilisation of the material
and sketches б show the utilisation of the material after slight
redesigning. In the case of the component shown in Fig.1, the
productivity was doubled; instead of one component per stroke, two
components per stroke are being produced, using a stamping-tool
design as shown in Fig.6. (the top part of the middle sketch shows
the section along of the top sketch; the bottom part
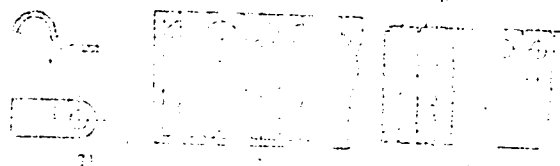of the middle sketch shows the section along
Card 1/5

S/536/60/000/047/001/002
E073/E135

Influence of the design of components on the productivity and
economics in cold-stamping operations

of the bottom sketch). It is stated that the redesigned stamping
tools were only slightly more complicated than the original
design, which is not shown.
There are 6 figures.

Fig.1

Card 2/5

ODLEN, T. P., Docent

"The Klevel aug 1   ? ctues in the   ?,

GOLEV, V.P., dotsent

Use of N.I. Pirogov's classic method of cutting combined with dioptrography and planimetry in modern topographoanatomical studies of some human organs. Trudy Izhov.gos.med.inst. 13:199-205 '51.

(MIRA 13:2)

1. Zaveduyushchiy kafedroy normal'noy anatomii cheloveka Izhevskogo meditsinskogo instituta.

(ANATOMY, SURGICAL AND TOPOGRAPHICAL)

GOLEV, V.P., dotsent

Anatomy and topography of the blood vessels in capsules of human
intervertebral joints. Trudy Izhev.gos.med.inst. 13:206-212 '51.
(MIRA 13:2)
1. Zaveduyushchiy kafedroy normal'noy anatomii cheloveka Izhevskogo
meditsinskogo instituta.
(SPINE--BLOOD SUPPLY)

GOLEV, V.P., dotsent

Investigation of the displacement of contiguous bone surfaces in
some joints of the human body during physical exercise. Trudy Izhev.
gos.med.inst. 13:458-464 '51.   (MIRA 13:2)

1. Zaveduyushchiy kafedroy normal'noy anatomii Izhevskogo meditsinskogo
instituta.
                    (JOINTS)   (ATHLETES)

GOLEV, Vladimir Petrovich (Izhevsk State Medical Institute) for Doctor

of Biological Sciences on the basis of the dissertation defended 5 Jan. 1959

in the Council of the First Moscow Order of Lenin Medical Institute im.
                                        Occipital
Sechenov, entitled: "Morphology of the Neck Region of Man (Dioptrographic

Investigation)".   (BMVISSO USSR, 2-61, 19)

23
19

GOLEV, V.P.; DO SUAN KHOP

Methods of teaching and research in the field of morphology in
the Democratic Republic of Vietnam. Arkh. anat., gist, i embr.
47 no. 11:95-98 N '64.   (MIRA 19.')

1. Kafedra anatomii Izhevskogo meditsinskogo instituta (zav. -
prof. V.P. Golev) i kafedra anatomii (zav. - prof. Do Suan Khop)
Khanoyskogo meditsinskogo instituta, Demokratichekaya respublika
V'yetnam. Adres avtorov: Izhevsk, Meditsinskiy institut, kafedra
normal'noy anatomii (for Golev); Khanoy, Demokraticheskaya Res-
publika V'yetnam Meditsinskiy institut, kafedra normal'noy
anatomii (for Do Suan Khop). Submitted January 10, 1963.

GOLEV, Ya. /.

The development of long term agricultural credit in the U.S.S.R.
Fin.SSSR 17 no.2:54-63 F '56.   (MIRA 9:6)

1.Predsedatel' pravleniya Sel'skokhozyaystvennogo banka SSSR.
        (Agricultural credit)

GOLEV, Yakov Il'ich; ROSHCHINA, L., red.izd-va; LEBEDEV, A., tekhn.red.

[Agricultural credit in the U.S.S.R.] Sel'skokhoziaistvennyi kredit
v SSSR. Moskva, Gosfinizdat, 1958. 77 p.   (MIRA 11:5)
     (Agricultural credit)

GOLEV, Ya. /

    Reorganization of machine-tractor stations and work of the
    Agricultural Bank. Fin. SSSR 19 no. 7:17-26 Jl '58.   (MIRA 11:8)

    1. Predeedatel' Pravleniya Sel'skokhozyayatvennogo banka SSSR.
                    (Agricultural credit)

VALEYEV, A.M.; GOLEV,Yu.D.; GOLEVA, Z.N. ; GOLOVKO, R.Ye.; ZAV'YALOVA, B.A.;
    ZARETSKIY, B.A.; ZVEREV, Ye.A.; LIPINSKIY, F.A. ; MANGUSHEV, I.Kh.;
    MEYZLER, M.Kh.; MUTOVKIN, V.A.; RUDAKOV, Ya.D.; RUKOVANOV, B.F.;
    KHASANOV, G.M.; ESTRIN, Z.I.; ZUDIN, B.A. , red.; BORUNOV, N.I., tekhn. red.

[Adjustment and operation of equipment in the Novo-Ufimskii Heat and
Electric Power Plant] Naladka i ekspluatatsiia oborudovaniia na Novo-
Ufimskoi TETs. Moskva, Gos. energ. izd-vo, 1961. 175 p. (MIRA 14:9)
              (Bashkiria—Electric power plants)
              (Bashkiria—Heating from central stations)

BORISOV, Ye.F., dots.; BREGEL', E.Ya., prof.; BUKH, Ye.F., dots.;
    VASHENTSEVA, V.M., dots.; GOLEVA, Yu.P., kand. ekon. nauk;
    GOLEVA, A.P., kand. ekon. nauk; DEMOCHKIN, G.V., dots.;
    DONABEDOV, G.T., kand. ekon. nauk; YERMOLOVICH, I.I., dots.;
    KALYUZHNYY, V.M., dots.; KORNEYEVA, K.G., dots.; KUZNETSOVA,
    A.S., prof.; MIROSHNICHENKO, V.S., dots.; MYASNIKOV, I.Ya.,
    kand. ekon. nauk; PIKIN, A.S., dots.; SIDOROV, V.A.; SMIRNOV,
    A.D., dots.; SOLOV'YEVA, K.F., dots.; SOROKINA, I.F., dots.;
    TARUNIN, A.F., kand. ekon. nauk; KHARAKHASH'YAN, G.M., prof.;
    MENDEL'SON, A.S., red.; SHVEYTSER, Ye.K., red.; ROTOVA, R.S.,
    red.; GARINA, T.D., tekhn. red.

[Economics of socialism] Politicheskaia ekonomiia sotsializ-
ma. Moskva, Gos.izd-vo "Vysshaia shkola," 1963. 476 p.
                                    (MIRA 17:2)

GOLEVA, G.A.

Geochemistry of underground waters in mineral deposits of
the Western Ukraine. Probl.geokhim. no.1:228-248 '59.
                                    (MIRA 13:7)
     (Ukraine, Western--Water, Underground)

GOLEVA, G.A.

Hydrogeological characteristics of the formation of sulfur deposits in the cis-Carpathian region. Sov.geol. 5 no.2:88-99 F '62.

(MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii.

       (Carpathian Mountain region—Water, Underground)

        (Carpathian Mountain region—Sulfur)

AL'TOVSKIY, M. Ye.; GOLEVA, G.A.; KRAYEV, S.P.; SLAVYANOVA, L.V.;
    TOKAREV, A.N.; FROLOV, N.M.; SHVETS, V.M.

    Development of V.I.Vernadskii's concept in present-day hydrogeology.
    Trudy VSEGINGEO no.9:5-20 '61.   (MIRA 17:10)

GOLEVA, G.O. [Holieva, H.O.]

Studying the hydrogeology of the Truskavets region. Pyt.geol.
no.9:188-199 '58.   (MIRA 13:4)
      (Truskavets region--Water, Underground)

GoLEVA N. G.

USSR/Medicine - Physiology   FL-427

Card 1/1   Pub 33-29/29

Author   :   Goleva, N. G.

Title   :   Recording respiratory movements in birds

Periodical   :   Fiziol. zhur. 40, 360-363, May/Jun 1954

Abstract   :   A new method of recording respiratory movements in birds is des-
                 cribed. A description is given of a pneumograph containing an ad-
                 justable band which can be tied around the thorax of a bird.
                 Respiratory movements of the thorax of doves, owls, merlins, and
                 bullfinches were successfully measured with the aid of this pneumo-
                 graphic band. This method is superior to any method previously used,
                 because the normal behavior of birds examined is not restricted.
                 Conditioned reflex was formed easily enough in owls. Diagrams.
                 Four Soviet references.

Institution :   Division of Comparative Physiology and Pathology of Higher Nervous
                 Activity, Institute of Experimental Medicine, Academy of Medical
                 Sciences USSR, Leningrad

Submitted   :   August 17, 1953

GOLEVA, R.V.

Intraformational horizon in the lower Liassic volcanic formation
(Caucasus, Northern Ossetia). Izv.AN SSSR.Ser.geol. 25 no.8:97-99
Ag '60.   (MIRA 13:8)

1. Geologios"yemochnaya partiya Sevkavtsvetmetrazvedka, g.
Ordzhonikidze.
              (Caucasus--Geology, Stratigraphic)

KOZETA, I.V.

Prospecting for lead-zinc deposits in the sedimentary rocks
of North Ossetia (Northern Caucasus). Geol. rud. mestorozh.
5 no.6:47-62 N-D '63.

Is a epitomy of former copy. Mekhinstavskoy informatsii
gosudarstvennoe i   Institut mineral'nogo syr'ya koordinatsii
nauchno-issled-vate.

L 10071-63   EPF(c)/EWT(m)/EPF(a)-2/BDS--AFFTC/ASD/'ASD--Pr-4/Pu-4
ACCESSION NR: AR3000346   8/0058/63/000/004/A042/A042

SOURCE: RZh. Fizika, Abs. 4A348

AUTHOR: Tsenter, E. M.; Kosolapov, M. G.; Goleva, V. I.   64

TITLE: Spark counter for the control of Alpha contamination of external surfaces
of polonium-beryllium neutron sources

CITED SOURCE: Sb. rabot po nekotorym vopr. dozimetrii i radiometrii ionizir.
izlucheniy. Vyp. 2. M., Gosatomizdat, 1961, 249-257

TOPIC TAGS: Spark counters, Alpha particles, air or argon filled

TRANSLATION: The construction is described of a spark detector of the well type
with a measurement geometry close to 4 Pi, intended for the determination of the
degree of Alpha contamination of the exterior surfaces of Po-Be neutron sources.
The detector is a combination of a cylindrical and end-window counter, connected
to form a single structure. The cylindrical counter consists of a cylinder
(cathode) 70 mm. in diameter, 2 rings, an insulator, and 7# tungsten filaments

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L 10071-63
ACCESSION NR: AR3000346

0

0.06 mm. in diameter (anode), stretched at a distance of 1.2 mm. from the inside
surface of the cylinder, parallel to its generatrix. The end-window counter
consists of a flat round disk (cathode), inserted in a Plexiglas mount, and 30
tungsten filaments (anode) 0.66 mm. in diameter. The gap between the filaments
and the disc amounts to 1.2 mm. Both counters are secured to a Plexiglas disc,
placed in a metallic housing, and operate independently of each other. The
main operating characteristics of the counter are presented for both atmospheric
air and argon as a filler. The counting efficiency for Alpha particles and
neutrons are respectively 3 and 0.00011% for air and 12 and 0.00046 for argon.
The described spark counter can be used successfully for the registration of
Alpha particles against an intense background of Beta and Gamma radiation.

DATE ACQ: 14May63   ENCL: 00   SUB CODE: PH

lm/
Card 2/2

KSHANOVSKIY, S.A., kand.med.nauk; CHAPLYGINA, M.N.; ZHILKEVICH,A.P.;
    GOLEVA, V.K.

    Experience with wide use of intracutaneous BCG revaccination in
    rural areas of Khmel'nitskiy Province. Probl.tub.41 no.11:7-11 '63.
                                                    (MIRA 17:9)

    1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta tuberkuleza
    i grudnoy khirurgii (dir. - dotsent A.S.Mamolat) i Khmel'nitskogo
    oblastnogo otdela zdravookhraneniya (zav.Ye.S.Grigor'yeva).

GOLEVA, Yuliya Pavlovna; SHVEYTSER, Ye.K., red.; MURASHOVA, V.A., tekhn.
red.

[Loan capital and credit] Ssudnyi kapital i kredit. Moskva, Gos.
izd-vo "Vysshaia shkola," 1961. 45 p.   (MIRA 14:12)
(Finance)

BORISOV, Ye.F., dots.; BREGEL', E.Ya., prof.; BUKH, Ye.M., dots.;
VASHENTSEVA, V.M., dots.; GOLEVA, Yu.P., kand. ekon. nauk;
GOLEVA, A.P., kand. ekon. nauk; DEMOCHKIN, G.V., dots.;
DONABEDOV, G.T., kand. ekon. nauk; YERMOLOVICH, I.I., dots.;
KALYUZHNYY, V.M., dots.; KORNEYEVA, K.G., dots.; KUZNETSOVA,
A.S., prof.; MIROSHNICHENKO, V.S., dots.; MYASNIKOV, I.Ya.,
kand. ekon. nauk; PIKIN, A.S., dots.; SIPOROV, V.A.; SMIRNOV,
A.D., dots.; SOLOV'YEVA, K.F., dots.; SOROKINA, I.F., dots.;
TARUNIN, A.F., kand. ekon. nauk; KHARAKHASH'YAN, G.M., prof.;
MENDEL'SON, A.S., red.; SHVEYTSER, Ye.K., red.; ROTOVA, R.S.,
red.; GARINA, T.D., tekhn. red.

[Economics of socialism] Politicheskaia ekonomiia sotsializ-
ma. Moskva, Gos.izd-vo "Vysshaia shkola," 1963. 476 p.
                                        (MIRA 17:2)

VALEYEV, A.M.; GOLEV,Yu.D.; GOLEVA, Z.N. ; GOLOVKO, R.Ye.; ZAV'YALOVA, B.A.;
    ZARETSKIY, B.A.; ZVEREV, Ye.A.; LIPINSKIY, F.A.; MANGUSHEV, I.Kh.;
    MEYZLER, M.Kh.; MUTOVKIN, V.A.; RUDAKOV, Ya.D.; RUKOVANOV, B.F.;
    KHASANOV, G.M.; ESTRIN, Z.I.; ZUTIN, B.A.; red.; BORUNOV, N.I., tekhn. red.

    [Adjustment and operation of equipment in the Novo-Ufimskii Heat and
    Electric Power Plant] Naladka i ekspluatatsiia oborudovaniia na Novo-
    Ufimskoi TETs. Moskva, Gos. energ. izd-vo, 1961. 175 p. (MIRA 14:9)
            (Bashkiria—Electric power plants)
        (Bashkiria—Heating from central stations)

FILIPOWICZ, B. GOLEWSKI, S.

FILIPOWICZ, B.; GOLEWSKI, S.; PILEK, K.; SKARZYNSKI, J.

Ionophoretic determination of composition of nucleotides in ribonucleic acid of the pancreas. Acta physiol. polon. 5 no.4:629-633 1954.

1. Z Zakladu Chemii Ogolnej i Chemii Fizjologicznej Akademii Medycznej w Lodzi. Kierownik: prof. dr B.Filipowicz.
    (NUCLEIC ACIDS, metabolism,
      ribo, in pancreas, iontophoresis of nucleotides)
    (NUCLEOTIDES, determination,
      iontophoresis in pancreatic ribonucleic acid)
    (PANCREAS, metabolism,
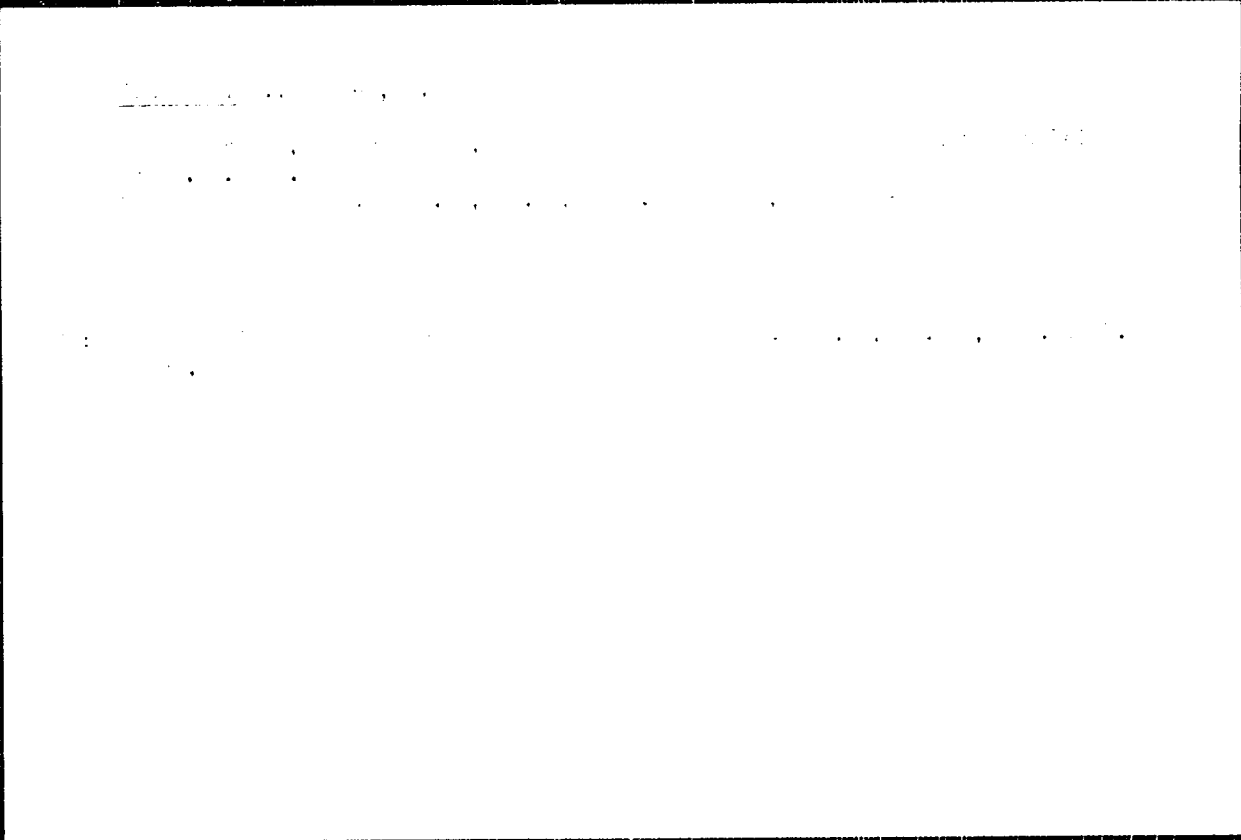   ribonucleic acid, iontophoresis of nucleotides in)
    (ION TRANSFER,
      iontophoresis of nucleotides in pancreatic ribonucleic acid)

GOLEWSKI, S.

Regularities in the composition of pancreas ribonucleic acids. B. Filipowicz, S. Golewski, and R. Pilek (School Med., Lodz). *Bull. acad. polon. sci.*, Classe II, 3, 7-10 (1955)(in English).—The compn. of ribonucleic acids (NRA) isolated from human pancreas showed the ratio of purines to pyrimidines to be close to 1 and that of adenine to uracil and guanine to cytosine to occur in equimolar quantities. Similar results were obtained earlier by Filipowicz, et al. (*Acta Phys. Polon.* 5, 629(1954)) on the compn. of NRA isolated from ox pancreas, and by Chargaff (C.A. 45, 10367) on the compn. of deoxypentose nucleic acids (DNA), with thymine taking the place of uracil in NRA. The above results suggest a similar structure in NRA and in DNA, namely, that of a double-stranded helical structure.   Seymour Hartman

GOLEWSKI, S.

1948. Composition of RNA from normal pancreas. (I. Filipowicz, S. Golewski, and K. Tikal *Acta Biochim. Polon.* 1956, 3, 99—85 [in English. Chem., Acid., Med., Lodz, Poland].—Nucleoprotein from human and ox pancreas was purified (extraction with 10% NaCl soln. and pptn. with alcohol), hydrolysed (0.5 N KOH) and the resulting ribonucleotide mixture separated by ionophoresis. Total P was estimated and the results checked paper-chromatically and spectro-photometrically. Adenine, uracil, guanine, cytosine, and purine: pyrimidine ratios were found to be near 1 and a quantitative relationship was established between the keto- and amino-groups in position 6. It is concluded that the structure of RNA is similar to that of DNA, i.e., a repeating spiral chain structure with linkages between corresponding imino-enolic groups. (Polish)

A. K. Garpowski

FILIPOWICZ, Bronislaw; PILEK, Kazimierz; WITKOWSKI, Slawomir; GOLEWSKI,
      Stanislaw

      Nucleic acids in the blood. I. Content of nucleic acids in human
      blood serum. Polski tygod.lek. 15 no.15:537-538 11 Ap '60.
                  (NUCLEIC ACIDS blood)

GOLEWSKI, St.

Phosphorylating enzymes of nucleic acids. I. Incorporation of $[^{32}P]$ orthophosphate into thymus nucleic acids. Acta biochim. pol. 9 no.4: 367-372 '62.

1. Department of General and Physiological Chemistry, Medical School, Lodz.

(THYMUS GLAND)   (RNA)   (PHOSPHATES)

GOLAY, M.; LYAPUNOV, B.

[The electric power plant] Fabriki elektrichestva. Moskva, Gos.
izd-vo detskoi lit-ry, 1953. 158 p.   (MLRA 7:2)
                                   (Electric power plants)

GOLEYEVYKIY A A

Concentration of low grade sulfur-containing solid fuels. A. A. Goleyvskii. U.S.S.R. 65,825, Feb. 28, 1946. The method is applicable to the concn. of S-contg. shales. The shales are heated in a multizone tunnel or rotary kiln to, e.g., 500° and then cooled with H₂O to, e.g., 80°. The cooling is carried out with const. agitation. If needed, the heating and cooling are repeated. The dried shale, free of org. S, is used either for destructive distn. or gasification.   M. Hor-h

A.S.M.-S.L.A.   METALLURGICAL LITERATURE CLASSIFICATION

271

Goleyevskiy A.A Prof.

Voprosy mekhaniki struynogo dvizheniya zhidkostey i gazov; abrisy i
    fizicheskiye modeli (Problems of Mechanics of Jet Flow Motion
    of Fluids and Gases, Contours and Physical Models) Moscow,
    Mashgiz, 1957, 87 p. 1,000 copies printed.

Sponsoring agency. Nauchno-tekhnicheskoye obshchestvo mashino-
    stroitel'noy promyshlennosti. Leningradskoye oblastnoye
    pravleniye.

Tech. Ed : Sokolova, L. V.

PURPOSE: This work will be useful to designers in various branches
             of machine building. It may help in the solution of prob-
             lems of fluid mechanics.

COVERAGE: This booklet is a summary of the author's more voluminous
             work, which will be published under the title "Develop-
             ment of the Theory of Fluid Motion in Other Fluids and
             the Interaction with Solid Bodies" and which represents
             30 years of the author's work in this field. In this ab-
             breviated form the author presents in advance for the

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Problems of Mechanics of Jet Flow Motion of Fluids (Cont.)

critical scrutiny of the reader, some new conceptions, his
method of reasoning, the physical models of submerged jet
flow, and some samples of integration. In the introduction, the
author quotes the criticisms of the Prandtl-Karman 3-dimen-
sional flow theory made by Soviet authorities on hydrodynamics,
who consider the application of this theory to the study of
submerged jet streams to be erroneous. There are 24 Soviet
references. The following personalities and their respective
fields of interest are mentioned Satkevich, A.A., Prof. and
Fridman, A.A., Acad., investigation of an injector and the
calculation of jet pumps (about 1930); Nikuradze, - research
on pulsation in conduits; Yes'man, I.G., Acad., called by the
author the "founder of Soviet hydraulics"; Simonov, A.A., Dr.
of Techn. Sciences - study of the boundary layer and of tur-
bulence; Zamarin, Ye. A. - boundary layer study; Yevreinov,V.N.,
Prof. - critic of the "Göttingen Prandtl school"; Krylov, A.N.,
Acad., Zamarin, Ye.A., Acad. - hydraulics; Bakhmetyev, B.A., -
modelling of turbulence; Milovich, A.Ya., Prof. - one of the
first scientists to study problems of the submerged jet stream
(1908); Tsimm, V., Tryupel', T., and Ivantsov, G.P., experi-

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Problems of Mechanics of Jet Flow Motion of Fluids (Cont.)

mental research work and theoretical considerations on sub-
merged jet streams which led to the definition of the "Kono-
valov Effect": Tolmin, Prandtl, and Schlichting elaborated the
theory of a free submerged jet stream; Abramovich, G.N. and
Loytsyanskiy, L.G. completed the study of the theory of the
free submerged jet stream and published it in their works;
Lyakhovskiy, D.N. and Baturin, V. V. were the authors of many
works on fluid mechanics; Bakharev, V. A., the author of an
original theory on jet streams; Pozdyunin, V.L. Acad.;
Kochina, Ye. Ya., Corresponding Member of the Academy; and
Kirpichev, M.V., Acad. - scientists in the field of fluid
mechanics. For the construction of physical models and for the
verification of the derived equations the author used works of
the following authors: Linchevskiy, V.P.; Sadovskaya, N.N., -
Grum-Grzhimaylo, V. Ye.; Baturin, V.V.: Taliyev, V.N.; Kuz-
min, M.A.; Shvab, V.A.; Lyapin, A.N.; Keller, S.Yu.; Yarin,P.S.;
Shakh, A.K.; Arens, G.A.: and Borman. L.O.

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   II. Restricted Streams   29
  III. Theory and Analysis of Jet Pumps   54
AVAILABLE: Library of Congress

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GOLEŽ,Z.

Television monoscope. p. 104

RADIOAMATER. (Savez radioamatera Jugoslavije) Beograd, Yugoslavia
Vol. 13, no.4, April 1959.

Monthly list of East European Accessions (EEAI) LC, Vol.8, no.9, Sept 1959

Uncl.

GOL'F, I. (gorod Ivanovo).

Why are there so few women radio operators in Ivanovo?
Radio no.10:10-11 '56.   (MLRA 9:11)

(Ivanovo--Radio operators)

GOL'FAND, A.D., dotsent, kand.tekhn.nauk

Technological calculation and requisites for increasing the
effectiveness of various types of conveyer flow. Trudy LTIKHP
13:79-95 '57.   (MIRA 13:6)

1. Kafedra tekhnologicheskogo oborudovaniya pishchevykh
proizvodstv Leningradskogo tekhnologicheskogo instituta
kholodil'noy promyshlennosti.
                (Conveying machinery)

GOL'FAND, D.I.

Simplified plasma coagulation test; author's abstract. Zhur.mikrobiol.epid.i
immun. no.9:55 S '53.   (MLRA 6:11)

1. Iz kafedry detskoy khirurgii (zaveduyushchiy - professor N.I.Garber)
Dnepropetrovskogo meditsinskogo instituta (direktor - detsent I.M.Kucheryavyy).
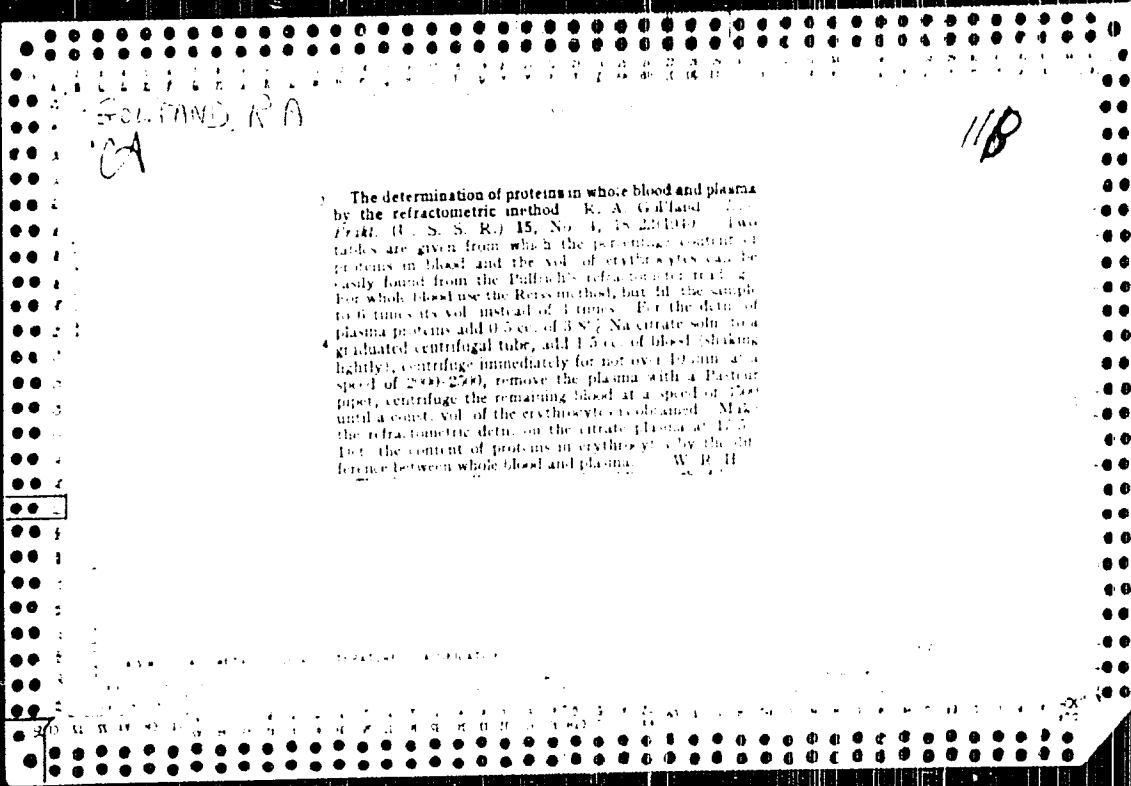   (Blood--Plasma)

GOLFAND. K. M.; SHVEREV. B. G.

"Investigation of Low Alloy High Speed Steel Type AlS," Metallurg (1940)
No 4. pp 38-42.

B-84590, 26 Apr 55
aut B - 86350
mat B- 50984

GOLFAND, R A

CA

118

The determination of proteins in whole blood and plasma by the refractometric method   R. A. Golfand   *Priki.* (U. S. S. R.) 15, No. 1, 13-22(1949)   Two tables are given from which the percentage content of proteins in blood and the vol. of erythrocytes can be easily found from the Pulfrich's refractometer reading. For whole blood use the Reiss method, but fill the sample to 6 times its vol. instead of 4 times.   For the detn. of plasma proteins add 0.5 cc. of 3.8% Na citrate soln. to a graduated centrifugal tube, add 1.5 cc. of blood (shaking lightly), centrifuge immediately for not over 10 min. at a speed of 2000-2500, remove the plasma with a Pasteur pipet, centrifuge the remaining blood at a speed of 2500 until a const. vol. of the erythrocytes is obtained.   Make the refractometric detn. on the citrate plasma at 12.5 for the content of proteins in erythrocytes by the difference between whole blood and plasma.   W. R. H.

The formaldehyde-gelatinization reaction. R. A. Gol'-fand. *Lab. Prakt.* (U. S. S. R.) 15, No. 9, 16-17 (1940). Exudate was examined by Zal'kind's method for blood serum, except that a larger amt. of the material was taken for the expts. Add to 1 ml. of the centrifuged exudate 0.25 ml. of formalin in a Vidal test tube, shake the mixt., let stand for 4 min. and det. the η in a Hess viscometer. The η of the formalinized pleural exudate varies between 2 and 12. η above 12 was not observed because the formalinized liquid with a greater η produced complete gelatinization from 1 to 5 min. In such cases the no. of min. required for the complete formaldehyde gelatinization was observed. The increase of the η of the formalinized exudate proceeds in parallel with the growth of the globulin fractions and the exudate has a min. protein coeff. when the gelatinization of the exudate is so promoted that the addn. of formalin causes a complete gelatinization and is hypergelatinosis. These data make it possible to use the very simple formaldehyde-gelatinization method instead of the complicated direct method for the detn. of protein fractions. W. R. Heinz

A. S. M. S. L. A. METALLURGICAL LITERATURE CLASSIFICATION

Gol'fand, Yu. A.

Gol'fand, Yu. A. On an isomorphism between extensions of groups. Doklady Akad. Nauk SSSR (N.S.) 60, 1123-1125 (1948). (Russian)

The author points out that the construction of Schreier [Monatsh. Math. Physik 34, 165-180 (1926); Abh. Math. Sem. Univ. Hamburg 4, 321-346 (1926)] for all the extensions of a group A by a group B may yield extensions which are seemingly different but actually isomorphic, leaving one with the problem of identifying the isomorphic extensions. An extension G may have several normal divisors isomorphic to A. In a fashion natural to the Schreier construction, one of these, A_0, is selected. An isomorphism between two extensions G and H (of A by B) is said to be of the first kind if the A_0 of G is carried onto the A_0 of H. A group of transformations Ω is defined on the set of all the Schreier extensions of A by B, each transformation represented by a triple consisting of a function u on B into A with $u(1_B) = 1_A$ and a pair of automorphisms φ and ψ of B and A, respectively, multiplication of triples being defined in a special way. The principal result, a partial solution of the isomorphism identification problem, is that G and H, two extensions of A by B, are connected by an isomorphism of the first kind if and only if G and H are in the same transitivity class with respect to Ω, all such isomorphisms being realized by elements of Ω. A sufficient condition on A and B is found for this partial solution to be the complete solution of the isomorphism problem. For a somewhat different point of view, see Baer [Math. Z. 38, 375-416 (1934)].

P. Hsiao (St. Louis, Mo.).

Source: Mathematical Reviews,   Vol 9 No. 10

Gol'fand, Yu. A.

Gol'fand, Yu. A. On groups all of whose subgroups are special. Doklady Akad. Nauk SSSR (N.S.) 60, 1313-1315 (1948). (Russian)

Miller and Moreno [Trans. Amer. Math. Soc. 4, 398-404 (1903)] investigated the problem of finding those finite non-Abelian groups for which every proper subgroup is Abelian. Šmidt [Rec. Math. [Mat. Sbornik] 31, 366-371 (1924)], in a more general investigation, found that all the (finite) groups of type S are of an order $p^a q^b$, where p and q are primes. A group of type S is a nonspecial group, every proper subgroup of which is special, where a special group is one which is the direct product of cyclic groups of prime power orders. In the present paper it is found that, for fixed p, q and a, there exists essentially one group Γ_0 of type S with maximal order $p^a q^{\beta_0}$, where $\beta_0 = b$ if b is odd and $\beta_0 = \frac{1}{2} b$ if b is even, where b is the least positive integer for which $q^b \equiv 1 \pmod p$. For fixed p, q and a, all other groups of type S may be obtained from Γ_0 by reducing it with respect to its central normal divisors. Let Σ be the subgroup of order q^β of a group Γ of type S with order $p^a q^\beta$; and let Φ be the largest normal divisor of Γ included in Σ. Typical of the author's results are the following. If Σ is non-Abelian, every element of Φ has order q, the same result holding for elements of Σ if $q \neq 2$. For non-Abelian Σ, Φ is also the center and first derivative of Σ.   F. Haimo (St. Louis, Mo.).

Source: Mathematical Reviews,   Vol   9   No. 10

GOLFAND, YU. A.

Gol'fand, Yu. A. Metaspecial groups. Mat. Sbornik N.S.
27(69), 229-248 (1950). (Russian)

Let G be a finite solvable group, $\nu(G)$ the minimal
normal subgroup of G such that its factor-group is special.
Let $G = H_0 \supset H_1 \supset \cdots \supset H_k = 1$ be the descending special
series for G, that is, $H_i = \nu(H_{i-1})$ for $i = 1, 2, \ldots, k$. If $k \geq 1$,
G is called metaspecial. The principal results of this paper
are arithmetic criteria for the natural number g in order
that every group of order g should be, firstly, special or,
secondly, metaspecial. Let L_1 be the class of all natural
numbers having no divisor of the form $p^\lambda q$, where p and q
are distinct primes and λ is the exponent of p modulo q. Let
L_2 be the class of all natural numbers having no divisor of
the form $p^\mu q^\nu r$, where p, q, r are primes, $p \neq q$, $q \neq r$,
where λ is the exponent of p modulo q, μ is the exponent of
q modulo r, and $m(\lambda, \nu)$ is the least common multiple of λ
and r. Let g be a natural number; every group of order g is

special if and only if g belongs to L_1; every solvable group
of order g is metaspecial if and only if g belongs to L_2.
Various applications are cited, including some known results
previously obtained by other methods. Other theorems in
this paper indicate the broadness of the classes L_1 and L_2
or give conditions for determining whether a particular
number belongs to one of the classes.   R. A. Good.

Source: Mathematical Reviews,   Vol. 12 No. 1

Gol'FAND, Yu. A

Gol'fand, Yu. A. On the group of automorphisms of the holomorph of a group. Mat. Sbornik N.S. 2 (69), 331–350 (1950). (Russian)

Let G be a group, A its group of automorphisms, Γ its holomorph, Ω the group of automorphisms of Γ, Δ the subgroup of Ω leaving G invariant, Σ the group of inner automorphisms of Γ. A mapping $u(\alpha)$ of A into G is a crossed character if $u(\alpha\beta) = u(\alpha)u(\beta)$; it is regular if $\alpha \to \alpha\varphi[u(\alpha)]$ is an automorphism of A, where $\varphi(x)$ denotes the inner automorphism by x. For v in G the function $u(\alpha) = \sigma v^{-1}$ is a principal crossed character. The regular crossed characters form a group U, and the principal ones a normal subgroup V of U. The groups Δ and Σ are semidirect products of A with U and V respectively. In special cases more can be said. If G is noncommutative and characteristically simple, then $\Omega : \Gamma = 2$. If G is cyclic of odd order, or Abelian of type $(p, p, \ldots, p)$ with p odd, then Γ is complete, that is, it is a centreless group with all its automorphisms inner.   *I. Kaplansky (Chicago, Ill.).*

G O L F A N D, Y. A.

USSR/Nuclear Physics - Pion-Nucleon Interaction   FD-713

Card 1/1   : Pub 146-1/18

Author   : Tamm, I.   nd, Yu. A.; and Feynberg, V. Ya.

Title   : Semiphenomenological theory of interaction of pions with nucleons. I

Periodical   : Zhur. eksp. i teor. fiz., 26, 649-667, Jun 1954

Abstract   : Analyze the scattering of pions by nucleons under damping. If ad-
                 equate four free parameters are chosen, a satisfactory agreement
                 with experimental data, with the angular distribution of scattered
                 pions, and with the dependence of cross sections on energy within
                 the tested energy range can be attained. 14 references, including
                 10 foreign.

Institution   : Physics Institute imeni Lebedev, Acad Sci USSR

Submitted   : January 6, 1954

USSR/Physics - Quantum mechanics   FD-1317

Card 1/1   Pub 146-2/25

Author   : Gol'fand, Yu. A.

Title   : Construction of the function of propagation by the method of quasi-fields

Periodical : Zhur. eksp. i teor. fiz. 28, 140-150, February 1955

Abstract   : The author develops an apparatus of quasi-fields by means of which he con-
              structs an expression for propagation functions. He demonstrates that the
              propagation functions obtained by this method are identical to the propaga-
              tion functions of ordinary theory. For the propagation functions he gives
              a closed expression in the form of an infinite-fold integral. The author
              notes that one of the clearest peculiarities of the modern state of the
              quantum theory of wave fields is the very good agreement of the results of
              quantum electrodynamics with experimental data, while the results of the
              meson theory (existing theory of interaction of pi-meson and nucleon fields)
              possess only a qualitative character and cannot be reduced to any satisfac-
              tory quantitative agreement with data. Sixteen references (e.g. L. D. Lan-
              dau, A. A. Abrikosov, I. M. Khalatnikov, I. M. Gel'fand, R. A. Minlos, Ye.
              S. Fradkin, all in DAN SSSR, 1954).

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

Sub   : July 10, 1954

USSR/Nuclear Physics - Elementary Particles

C-3

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33919

Author : Gol'fand, Yu. A.

Institution : Physics Institute, Academy of Sciences USSR

Title : On an Estimate of the Cross Section of the π^+ p-Scattering from the Cross Section of the π^- d-Scattering near Resonance

Original
Periodical : Zh. eksperim. i teor. fiziki, 1956, 30, No 2, 413-414

Abstract : An estimate is made of the fundamental effects that reduce the magnitude of the cross section of scattering of π^--mesons by a neutron tied in the deuteron compared with the corresponding cross section for the free neutron. It is shown (within the framework of the momentum approximation) that if one takes into account the internal motion of the nucleons in the deuterons, then the cross section is reduced by approximately 10%. The effect of

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USSR/Nuclear Physics - Elementary Particles   C-3

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33919

the interference of the waves scattered by the proton and by the
neutron leads to a supplementary reduction in the cross section
by a magnitude of the same order (Referat Zhur - Fizika, 1954,
3537). This leads to the conclusion that the small value of the
cross section of π^+-mesons with protons (equal in accordance with
the charge independence to the cross section of π^--mesons with
neutrons), obtained from deuteron data (Referat Zhur - Fizika,
1956, 6267) does not contradict the suggested resonant interaction
between the π-mesons and the nucleon in a $^{3/2}P_{3/2}$ state.

Card 2/2

GOL'FAND JU A

SUBJECT   USSR / PHYSICS   CARD 1 / 2   PA - 1536
AUTHOR   GOL'FAND,JU.A.
TITLE   The Generalized Phase Analysis as a Result of the Unitarity of
             the S-Matrix.
PERIODICAL   Žurn.eksp.i teor.fis,31, fasc.2, 224-231 (1956)
             Issued: 5.10.1956

The present work describes a method for the determination of the general
shape of the scattering amplitude. On this occasion the usual formulae of
phase analysis are generalized.
The S-matrix and the scattering amplitude: The operator which transforms the
inciding wave into the sum of the inciding and scattered waves has here the
shape $S = I_+ + \delta_+ (\mathcal{E} - \mathcal{E}')R$. Here I denotes the unit operator and the ma-
trix R the regular function of energy. Furthermore, it is true that
$\delta_+(\mathcal{E}) = (1/2) \delta(\mathcal{E}) + 1/2\pi i \mathcal{E}$. Here only such scattering processes are investi-
gated in which two colliding particles produce two scattered particles. When
studying any scattering process a system of states must be determined which may
be considered as closed (with respect to this scattering) in the known approxi-
mation. Only with a closed system it is possible to speak of a unitarity of the
S-matrix. For the differential scattering cross section $d\sigma/d\Omega = |F|^2 v_\alpha / v_0$
and, more exactly $d\sigma/d\Omega = (4\pi^2/p_0^2) | (\vec{n}\sigma\alpha |R| \vec{n}_0 \sigma_0 \alpha_0)|^2$ is found.
Here $\vec{n}$ denotes the unit vector in the direction of one of the particles,
σ - the variable of the total spin of the system, α - the totality of all the

Žurn.eksp.ˑ teor.fis,31,fasc.2, 224-231 (1956)   CARD 2 / 2   PA - 1536

remaining variables. The index "0" denotes the initial state.
The invariant operators W and the extension of the S-matrix: If no exterior
fields act upon the particles, the total angular momentum (including spin) M
of the system is conserved. It is then convenient to use a representation in
which the quantities M^2 and M_z are diagonal. Here the complete orthonormalized
system of the eigenfunctions of M^2 and M_z is constructed. A formula for the
S-matrix in the momentum space is given; on this occasion the S-matrix is split
up into diagonal blocks S_j, which correspond to the various values of j. In
certain concrete cases the S-matrices can be further separated by making use of
further theorems of conservation (conservation of the symmetry, of isotopic
spin, etc.).
Finally, the conclusions following from the unitarity of the S-matrix and the
generalized phase analysis are dealt with. Above all the diagonal blocks S_j
must be unitary matrices.

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

GOLFAND Yu A

As every vector ϕ can be obtained by the action of the creation operators on the vacuum ϕ_c, the transformations of ϕ are reduced to transformations of ϕ and to transformations of the creation operators, i.e. of the amplitude of the field. The amplitudes of the field do not transform themselves in accordance with the spinorial representation of the LORENTZ group, and the amplitudes which correspond to the electron- and positron states are transformed independently according to uniform representations. Here an inhomogeneous LORENTZ group $\mathcal{L}$ is investigated which contains spatial reflexions but no reflexions in time. The problem of reflexions in time is more complicated and requires a special investigation. On the occasion of transformations of the group $\mathcal{L}$ the vacuum ϕ obviously remains constant. For the purpose of explaining the law of transformation of the field amplitudes, the operator of the field is written down in the following relativistically invariant form in the representation of interaction:

$$\Psi(x) = (2\pi)^{-3/2} \int \{ u(p)\, a(p)\, e^{-ipx} + v(p)\, b^+(p)\, e^{ip} \} d\Gamma.$$ Here FEYNMAN's denotation system is always employed, and we put $\hbar = c = 1$. Integration is carried out over the hypersurface characterized by the conditions $p^2 = m^2$, $p_4 = E > 0$. $d\Gamma = (m/E)d^3p$ is the invariant element of the hypersurface and $u(p) = \| u_{\mu}^{\alpha}(p) \|$ is a matrix of 4 rows and 2 columns which is formed by two solutions of the DIRAC equations for positive

GOL'FAND, M, A.

18781
TRANSFORMATION PROPERTIES OF THE ELECTRON-
POSITRON FIELD AMPLITUDES. Iu. A. Gol'fand Acad-
emy of Sciences, USSR. Soviet Phys JETP 8, 646 (1957)
Apr.

ABSTRACT   The development of functional methods in the quantum theory of the field
            makes it possible to reduce the problem of the determination of the pro-
            pagator of a system of particles which are in interaction to the problem
            of the determination of the propagator of a fermion. This fermion is as-
            sumed to move in any exterior field of corresponding BOSE particles. The
            present work examines a new aspect of this problem. On this occasion a
            somewhat unexpected connection of the theory of FERMI fields with the
            theory of the spinors of an infinitely dimensional space becomes apparent.
            For reasons of concreteness the author here deals with quantumelectrody-
            namics, although all results may be transferred directly to all varieties
            of the meson theory. The operator of the quantized electron-positron
            field $\Psi(x)$ is written down as follows in interaction representation:
            $\gamma(x) = \Sigma u_n(x) \, a_n$. Here $u_n(x)$ denotes the complete orthonormalized sy-
            stem of the solutions of the DIRAC equation and a_n, according to the sign
            of the energy, denote either the operators of the annihilation of the el-
            ectron or the operators of the creation of a positron. The following an-
            ticommutators apply: $\Gamma_{n\alpha} \Gamma_{n\beta}{}^{+} \, \Gamma_{n\beta} \Gamma_{n\alpha} = 2\delta_{mn}\delta_{\alpha\beta}$. Here $\Gamma_{n1} = a_n + a_n^{+}$,
Card 1/2 $\Gamma_{n2} = (a_n - a_n^{+})/i$ denotes.

The Fermi Fields and Spinors of a Space of an Infinite   PA - 2649
Number of Dimensions.

These anticommutator relations make it possible to construct a spino-
rial representation of the rotation group E_∞ of an infinitely dimen-
sional euclidean space by means of the orders of magnitude $\Gamma_{n\alpha}$ etc.
The operators of the infinitely small rotations (moments) in this re-
presentation have the form $M_{AB} = (1/4\pi) \left(\Gamma_A \Gamma_B - \Gamma_B \Gamma_A \right),$ where A and B

are composed indices of the type (nα). The state vectors of the field
ψ then prove to be spinors. Next, the connection between the spinorial
and the vectorial representation of the rotations of the space E_∞ are
investigated. The corresponding relations in the field theory occur in
form of relations between the interaction representation and the
HEISENBERG representation.

ASSOCIATION
PRESENTED BY   I.E.TAMM, Member of the Academy
SUBMITTED   16.11.1956
AVAILABLE   Library of Congress
Card 2/2

AUTHOR: Dol'fsud, Yu. A

TITLE: On the Theory of Weak Interaction.I.(K teorii slabykh
               vzaimodeystviy,I)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki.
               Vol 35, Nr 1, pp 176 - 177 (USSR)

ABSTRACT: The hypothesis concerning the universal character of
               four-fermion interaction becomes more probable on the
               strength of the latest results obtained by investigations
               carried out in the field of weak interaction (Ref 1)
               although important experimental data on β-decay are
               contradictory to it. The author is of the opinion that
               this situation must change, and he recommends a new
               scheme of universal four-fermion interaction, which
               differs from those usually employed by the manner in
               which the nucleon fields are introduced into the theory
               The difficulties caused by the inclusion of β-decay
               are avoided by describing electron- and positron decays
               by different Fermi interaction variants. For the repre-
               sentation of the fields of particle-production it holds that

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On the Theory of Weak Interaction I

$$\psi_o(x) = \sum \sqrt{(1-\vec{v}\vec{\sigma})} \, \frac{1}{2} \varepsilon \, a^*(\vec{p}) e^{ipx}$$

the fields of particle-annihilation

$$\psi_a(x) = \sum \sqrt{(1-\vec{v}\vec{\sigma})} \, \frac{1}{2} \, a(\vec{p}) e^{-ipx}$$

$\vec{\sigma}$ = Pauli matrix, $\vec{v} = \frac{\vec{p}}{E}$ = the velocity vector of the particles $(\hbar = c = 1)$, $a^*(\vec{p})$ and $a(\vec{p})$ are the production and annihilation operators respectively. The Dirac matrix $\psi = (\varphi)$, and $\varepsilon = \begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$. It is shown that although the theory recommended is invariant with respect to CP-CT- and PT transformations, this is not the case with respect to CPT transformations. Finally, the author discusses the application of his method to various examples as well as some experimental and theoretical conclusions. He thanks B.L.I frb for his advice. There are 4 figures and 10 references.

Card 2/3

On the Theory of Weak Interaction I

ASSOCIATION: Fizicheskiy institut im. P.N.Lebedeva Akademii nauk SSSR
              (Physical Institute imeni P.N. Lebedev, AS USSR)

SUBMITTED: February 8, 1959

Card 5, 5

AUTHOR: Gel'fand, Iu. A.

TITLE: On the Theory of Weak Interactions. II (K teorii slabykh
          vzaimodeystviy. II)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki. 1958,
               Vol 35. Nr 3. pp 725-750 (USSR)

ABSTRACT: The present paper is based on the ideas discussed in a previous
             paper (Ref 1). The question is investigated by what non-
             Hermitian form the weak interaction Hamiltonian H_w can be intro-
             duced into the Hermitian total Hamiltonian. For the total
             Hamiltonian the following is set up:

$$\hat{H} = \begin{pmatrix} H_s & H_w \\ H_w^{+} & H_s \end{pmatrix}$$

             (in Hilbert (Gil'bert) space with
             double number of dimensions)

             In this "double" Hilbert space the inversion operator $\hat{P} = \begin{pmatrix} 0 & P \\ P & 0 \end{pmatrix}$
             applies. (The "second" Hilbert space appears as the reflection
             of the "first")
             The Hamiltonian H_w is represented by four-component field

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On the Theory of Weak Interactions. II   STV-56-55-5-24/6-

spinors, which describe pairs of charged particles:

Lepton pair (e, μ): $\quad \chi_L = \begin{pmatrix} \rho_a(\mu^-) + \rho_c(e^+) \\ \dot{\rho}_a(e^-) - \dot{\rho}_c(\mu^+) \end{pmatrix}$

Baryon pair (p, Σ^+): $\quad \chi_B = \begin{pmatrix} \rho_a(\widetilde{p}) + \rho_c(\Sigma^+) \\ \dot{\rho}_a(\widetilde{\Sigma}^+) + \dot{\rho}_c(p) \end{pmatrix}$

For the Hamiltonian one obtains

$$\mathcal{H}_w(\vec{x}, t) = \frac{g}{4\pi} \int_{-\pi}^{\pi} d\beta \left\{ (\overline{\chi}\psi)^R (\overline{\psi}\chi) + (\overline{\psi}\chi)(\overline{\chi}\psi)^R \right\}$$

For the χ-field it holds that

$$\chi(\vec{x}, t, \beta) \longrightarrow \begin{cases} U_P \chi U_P^+ = \gamma_4 \chi^R(-\vec{x}, t, \beta) & \text{(P)} \\ U_C \chi U_C^+ = C\chi^* (\vec{x}, t, -\beta) & \text{(C)} \\ U_S J \chi J U_S^+ = C\gamma_5 \chi^R(-\vec{x}, -t, -\beta) & \text{(S)} \end{cases}$$

Card 2/3   with the following properties of the matrix C: $C\gamma_\mu C^{-1} = -\gamma_\mu^*$;

on the Theory of Weak Interactions. II

$c^* = c^{0} = c^{+} = c$; c ...

For the total Hamiltonian in Schroedinger (Schresinger) representation it holds that $U_p H_w U_p^{+} = U_c H_w U_c = U_c H_w U_c = H_w$

and for the total Hamiltonian $\hat{H}$

$$\hat{H} = H_s + \frac{1}{2}(H_w + H_w^{+})\Lambda_1 + \frac{1}{2}(H_w - H_w^{+})\Lambda_2$$

with $\Lambda_1 = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$, $\Lambda_2 = \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix}$ is obtained.

If I is any elementary inversion, it holds that $\hat{I} = I\Lambda_1$, for $\hat{H}$: $[\hat{H}.\hat{I}] = 0$, for the strong interaction Hamiltonian H_s: $[H_s.I] = 0$.

The author then gives a representation of U_p, U_c, and U_s as exponential functions of $\vec{p}$ (cf. Ref 2).

There are 5 references, which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
               (Physics Institute imeni P. N. Lebedev of the Academy of
               Sciences, USSR)

Card 5/4

21(1), 24(5)

AUTHOR: Gol'fand, Yu. A.

TITLE: On the Introduction of an "Elementary Length" Into the Relativistic Theory of Elementary Particles

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959
                Vol 37, Nr 2(8), pp 504-509 (USSR)

ABSTRACT: The development of a theory of the elementary particles avoiding the "ultraviolet catastrophe" is impossible without the introduction of an elementary length l_o, setting a limit to the dimensions to which the conventional concepts concerning space are correct. Another and equivalent possibility is the introduction of an "extreme mass" $\mu \sim 1/l_o$ into the theory.

                This extreme mass effects corresponding restrictions in the momentum space. In this paper the attempt is made to develop such a theory. The basic concepts can be defined briefly as follows: the four dimensional momentum space is a space with constant curvature. The radius of curvature of this space is the extreme mass μ_o. The theory must now be developed in accordance with the geometry of the momentum space. In this paper the Feynmann diagram technique is generalized in the sense of the geometry of a momentum space with constant curvature. No ultraviolet divergencies will presumably occur in

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On the Introduction of an "Elementary Length" Into the Relativistic Theory
of Elementary Particles

this scheme. In the first section the momentum space with
constant curvature is discussed. The conventional theory cor-
responds to the case $\mu_0 = 0$. The numerical value of μ_0 must
be determined experimentally. The metric differential form
of this space $d\sigma^2 = (1-p^2)^{-1}\{dp+(1-p^2)^{-1}(pdp)^2\}$ holds.
The group of motions of the momentum space consists of all
point transformations which leave the non-euclidic distance
$D(p,q)=\ln(J+\sqrt{J^2-1}$, $J=(1-pq)/\sqrt{(1-p^2)(1-q^2)}$ invariant. This
group includes the group of Lorentz transformations, which
leave the absolute value of p^2 invariant and identically trans-
form the point $p = 0$. Moreover, this group of motions includes
the transformations of translation. The third section deals
with the foundations of the diagram technique. The introduc-
tion of a momentum space with constant curvature into the
theory requires a modification of the usual form of the con-
servation theorems of energy and momentum. The last two sec-
tions deal with some conclusions drawn from the non-commutivity
Card 2/3   of the "superposition" of momentum and the most simple self-

SOV/56-37-2-26/56

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of Elementary Particles

energy diagrams. There are 3 figures and 2 references, 1 of
which is Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Institute of Physics imeni P. N. Lebedev of the Academy of
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SUBMITTED: March 11, 1959

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GOL'FAND, Yu.A.

Gradient transformations in quantum electrodynamics. Zhur. eksp.
i teor. fiz.   38   no.1:308-309 Jan '60.   (MIRA 14:9)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR.
   (Quantum electrodynamics) (Transformations (Mathematics))

S/020/61/138/002/013/024
B104/B207

AUTHOR: Gol'fand, Yu. A.

TITLE: The threedimensional relativistic Schrödinger equation
                applied to the two-body problem

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 2, 1961, 331-333

TEXT: The author's aim was a relativistic generalization of the Schrödinger
equation without increasing the number of independent variables. The
equation derived differs insofar from the known equation by Bethe and
Salpeter (Phys. Rev., 84, 1232 (1951)). The Schrödinger equation is
represented in velocities with the velocity space being assumed as in-
variant with respect to the Lorentz transformations. From the geometrical
point of view, the velocity space may be regarded as a three-dimensional
Lobachevskiy space, the Lorentz group being the group of motion of this
space. First, the author shows schematically that a transition from
Euclidian geometry to Lobachevskiy's geometry in the velocity space
corresponds to the transition from classical to relativistic mechanics.
Subsequently, the interaction between two spinless particles with the

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S/020/61/139/002/015/024
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masses m_1 and m_2 is studied, the system in the chosen representation being described by the wave function $\Psi(v_1, v_2)$. The velocities v_1 and v_2 are substituted by the velocities

$$v = \frac{m_1}{M_0} v_1 + \frac{m_2}{M_0} v_2; \tag{4}$$

$$w = -\frac{m_2}{M_0} v_1 + \frac{m_1 + 2m_2 \, ch\, s}{M_0} v_2, \tag{5}$$

with

$$M_0 \equiv M_0(s) = \sqrt{m_1^2 + m_2^2 + 2m_1 m_2 \, ch\, s} ; \tag{6}$$

$$ch\, s = v_1 v_2 = tw. \tag{7}$$

holding. (7) indicates that the "distance" between v and w is equal to the "distance" between v_1 and v_2. v defines the center of mass velocity and is assumed to be independent on the interaction. Accordingly, the velocity w is the relative velocity. The interaction is described by the energy-

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The threedimensional relativistic...   S/020/61/130/00?/013/024
                                              B104/B207

pulse-operator which is defined by $\hat{P}_\mu = \hat{M} v_\mu$ (8). v_μ is the velocity of the center of mass accordingly to (4) and $\hat{M}$, the mass operator of the system. Thus, $\hat{M}$ has to fulfill the following requirements: 1) $\hat{M}$ is relativistically invariant. 2) $\hat{M}$ commutates with the vector of the center of mass velocity. In analogy with the non-relativistic theory, the operator $\hat{M}$ may be represented in the following form: $\hat{M} = M_0 + \hat{U}$, where the total mass M_0 of the "free" particles is given by (6); for $\hat{U}$ an integral operator can be chosen the kernel of which depends on the relative velocity. To construct $\hat{U}$, the vector w is represented in the following form: $w = v \, ch \, s + z \, sh \, s$, where $vz = 0$, $z^2 = -1$ (10) holds for z. The amount of all vectors z, satisfying (10), is geometrically equivalent to the Euclidian unit sphere. For w', the equation $w' = v \, ch \, s' + z' \, sh \, s'$ is given. $\hat{U}$ depends on the vectors w and w'. A study of the triangle wvw', where v is a constant velocity, reveals that the length of the side ww' of this triangle is the following: $ch \, c = ww' = ch \, s \cdot ch \, s' - sh \, s \cdot sh \, s' \cdot cos \, \alpha$ (11). The angle $\langle$ wvw' is defined by α and the following holds: $cos \, \alpha = -zz'$. (12) may be written down in the form $4 \, sh^2 \frac{c}{2} = -(w - w')^2$ (13). In the non-relativistic case

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(13) equals the relation $(\vec{v} - \vec{v}\,')^2$, where $\vec{v}$ and $\vec{v}\,'$ are the three-dimensional relative velocities. It is obvious that (13) is the relativistic analogon for the arguments of the kernel of J. The equation for the relative motion may be written down in the following form:

$$\hat{M}\psi \equiv M_0(s)\,\psi(s,\,z) + \int U\left(4\,\mathrm{sh}^2\,\frac{s}{2}\right)\psi(s',\,z')\,\mathrm{sh}^2 s'\,ds'\,d\Omega = M'\psi(s,\,z). \quad (14)$$

(14) satisfies all requirements and its spectrum may be discrete or continuous, depending on whether $M' < m_1 + m_2$ holds or $M' > m_1 + m_2$, where M' is the proper value of the total mass. In the non-relativistic limiting case (14) passes over into the non-relativistic Schrödinger equation. Yu. M. Shirokov is mentioned. There are 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
              (Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR)
PRESENTED: January 13, 1961, by I. Ye. Tamm, Academician
SUBMITTED: December 27, 1960
Card 4/4

S/056/62/043/001/036/056
B102/B108

AUTHOR: Gol'fand, Yu. A.

TITLE: Quantum field theory in a p-space of constant curvature

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
             no. 1(7), 1962, 256-267

TEXT: In quantum field theory a new mathematical technique has been
developed, in order to avoid difficulties in field theory, as e.g. the
dependence of the law of interaction on the particle momentum. This
theory is based on the p-space of constant curvature formerly
introduced by the author (ZhETF, 37, 504, 1959). Its radius of
curvature μ_0 acts as a cutoff parameter. This space of indefinite metric
is here called pseudoelliptical. In the integration over the momenta of
the virtual particles in this space one has to encounter a singularity on
the boundary of the physical range ($p^2 = 1$), but this can be avoided. In
this way a transition from a pseudo-elliptical to an elliptical p-space
of positively definite metric is performed. The coordinate operators in
the elliptical p-space are given by $\hat{x}_\mu = i\left\{\partial/\partial p_\mu + p_\mu(p\partial/\partial p)\right\}$. The

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Quantum field theory in a ...   S/056/62/043/001/036/056
                                                 B102/B108

technique is illustrated by the example of a pseudoscalar meson theory.
It permits calculating the matrix elements of any process, using finite
expressions only. The amplitude operator representation and the
generalization of the Schwinger equations (Proc. Nat. Acad. Sci. USA,
37, 452, 1951) for the Green's function to the field theory of p-space
are especially discussed. Some features caused by the non-commutivity of
the displacement operators $\hat{d}(k) = \hat{d}_o(k)\hat{d}_s(k)$ and not occurring in the
common theory are discussed. Some of them are connected with departures
from the laws of conservation of energy and momentum in particle
collisions. The influence of the integral character of the mass
operator on the state of physical particles is discussed here. In the
case of small momenta $p_\mu \ll \mu_o$ the results of this theory go over into
those of the common theory. There are 2 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
             (Physics Institute imeni P. N. Lebedev of the Academy of
             Sciences USSR)
SUBMITTED: February 21, 1962
Card 2/2

S/056/63/044/00 /020/044
B102/B186

AUTHOR: Gol'fand, Yu. A.

TITLE: Properties of the shifts in p-space of constant curvature

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
            no. 4, 1963, 1248 - 1261

TEXT: The author has developed a field theory (ZhETF, 37, 504, 1959; 43,
256, 1962) in which the pseudo-Euclidean momentum space is replaced by a
p-space with constant curvature; instead of the usual momentum addition
operation a shift operation is introduced. The properties of the latter are
now investigated in great detail for an elliptic p-space with positive-
definite metric. Instead of the previously used "k-parametrization"
(parametrization of the whole system of shifts by means of a vector k)

$$q = d_0(k)\, p = \frac{p\sqrt{1+k^2}+k\,[1-pk/(1+\sqrt{1+k^2})]}{1-pk}. \qquad (1.1)$$

"l-parametrization"

$$q = d_0(l)\, p = l + \frac{1+l^2}{1-l^2-2lp}(l+p). \qquad (2.1)$$

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Properties of the shifts in...

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is introduced; k = 21(1-1^2). (1.1) is appropriate for describing common additions (small p and k); in the case of large momenta, and especially when the case of q=-p is covered, l-parametrization is more convenient. With q=-p the so-called focusing singularity arises, which is the cause of the anomaly in particle-antiparticle interactions with equal momenta. This case is particularly considered here, since it has no analogon in common Euclidean geometry. Special attention is paid to energy-momentum conservation; it can be shown that this conservation law remains exactly valid for elastic scattering of fermions. Otherwise it may be considered only as an approximate law in generalized field theory. The possibility of bound-state formation is also discussed for the baryon - antibaryon system with small coupling constant. It can be shown that it is not necessary to introduce any special mechanism of strong interactions into this theory. On the basis of only universal weak and electromagnetic interactions, the strong interactions appear as a kind of secondary effect due to the formation of mesons as compound particles. There are 3 figures.

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(Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

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Properties of the shifts in...

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SUBMITTED: October 4, 1962

Card 3/3

GOL'FAND, Yu.A.

Space-time structure of the relativistic scattering matrix.
Zhur. eksp. i teor. fiz. 45 no.4:1067-1080 O '63. (MIRA 16:11)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.

L 22144-65 EWT(1)/   ASDA-5/SSD/AFWL/AFETR/ESDD(p) IJP(c)

ACCESSION NR: AP5001855

S/0056/64/047/006/2298/2305

AUTHOR: Gol'fand, Yu. A.

TITLE: Extension of quantum mechanics to the case of discrete time

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2298-2305

TOPIC TAGS: quantum mechanics, state vector, density matrix, equation of motion, correspondence principle

ABSTRACT: A possible extension of the equations of quantum mechanics to include the case of discrete time is considered, and generalized equations of motion are constructed for the density matrix in this case. Some properties of the equations of motion are studied. The treatment is in general form, independent of any specific scheme for quantizing space-time, and it is pointed out that the combination of various particular ways of constructing quantized space time with these equations will lead in general to different physical theories. Among the features of this scheme is that a quantum mechanical system can be described in this scheme by means of the density matrix only, and not by means of a state vector. The

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equations of motion for operators in the Heisenberg representation and the con-
servation laws are generalized in a natural fashion for the case of quantized
time. The most characteristic property of the equations considered is that they
are not invariant under time reversal. This property can be expressed as a law
of increase of an "entrop." This increase in entropy is not to be identified with
the law of increase of entropy for macroscopic systems. In the limit when time
is made continuous the equations go over into the usual Schrodinger equation for
the density matrix, so that a correspondence principle is observed. The equation
of motion derived exhibits a dissipativity property, which is manifest only as a
result of the discreteness of the time, and disappears completely in the limit as
time is made continuous. Orig. art. has: 44 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics
Institute, Academy of Sciences SSSR)

SUBMITTED: 24Jun64.   ENCL: 00

SUB CODE: GP   NR REF SOV: 003   OTHER: 001

Card 2/2

GOL'FARB, D.M.

Regularities of checker heating and ways to increase the
temperature of preheating the blast furnace blow. Izv. vys.
ucheb. zav.; chern. met. no.10:148-156 '60.   (MIRA 13:11)

1. Dnepropetrovskiy metallurgicheskiy institut.
   (Air preheaters) (Heat regenerators)