Semenov Yu P

BURKOVSKAYA, Ye.Kh., nauchnyy sotrudnik; IGRUNOV, V.D., nauchnyy sotrudnik; NECHAYEV, I.N., nauchnyy sotrudnik; BOBRIKOVA, V.N.; TERENT'YEVA, T.N.; SHCHERBAKOVA, L.F.; BERLIN, I.A., otv.red.; KITAYTSEV, A.M., red.; KUZ'MIN, L.A., red.; OLIMPOV, V.G., red.; SKITEYKIN, I.S., red.; RUSIN, N.P., red.; MARTYNOV, S.I., red.; SIMONOV, Ya.P., red.; IVANOV, A.P., red.; BESSONOV, N.P., red.; YASNOGORODSKAYA. M.M., red.; VLADIMIROV, O.G., tekhn.red.

[Directions for hydrometeorological stations and posts] Nastavlenie gidrometeorologicheskim stantsiiam i postam. Leningrad, Gidrometeor.
(Continued on next card)

BURKOVSKAYA, Ye.Kh.--(continued) Card 2.

izd-vo. No.3, pt.2. [Working up materials of meteorological
ovservations] Obrabotka materialov meteorologicheskikh
nabliudenii. 1958. 85 p.

(MIRA 13:1)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeoro-
logicheskoy sluzhby. 2. Glavnaya geofizicheskaya observatoriya im.
A.I.Voyeykova (for Burkovskaya, Igrunov, Nechayev). 3. Starshiye
inzhenery Nauchno-issledovatel'skogo instituta aeroklimatologii
(for Bobrikova, Terent'yeva). 4. Glavnoye upravleniye Gidrometeo-
rologicheskoy sluzhby SSSR (for GUGMS) (for Kitaytsev, Kuz'min,
Olimpov, Skiteykin). 5. Glavnaya geofizicheskaya observatoriya (GGO)
(for Berlin, Nechayev, Rusin, Shcherbakova). 6. Upravleniye gidro-
meteorologicheskoy sluzhby (UGMS) (for Martynov, Simonov, Ivanov,
Bessonov).

(Meteorology--Observers' manuals)

VOLOKH, V.G.; GUSHCHINA, M.V.; IGRUNOV, V.D.; NECHAYEV, I.N.; POKROVSKAYA,
I.A.; TRIFONOVA, T.S.; TSYGANOVA, A.M.; RUSIN, N.P., otv.red.;
KITAYTSEV, A.M., red.; KUZ'MIN, L.A., red.; OLIMPOV, V.G., red.;
SKITEYKIN, I.S., red.; BERLIN, I.A., red.; NECHAYEV, I.N., red.;
SHCHERBAKOVA, L.F., red.; MARTYNOV, S.I., red.; SIMONOV, Ya.P.,
red.; IVANOV, A.P., red.; BESSONOV, N.P., red.; YASNOGORODSKAYA,
M.M., red.; VLADIMIROV, O.G., tekhn.red.

[Directions for hydrometeorological stations and posts] Nastavlenie
gidrometeorologicheskim stantsiiam i postam. Leningrad, Gidro-
meteor.izd-vo. No.3, pt.1. [Observations at meteorological stations]
Meteorologicheskie nabliudeniia na stantsiiakh. 1958. 223 p.
(MIRA 12:12)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologi-
cheskoy sluzhby. 2. Sotrudniki Metodicheskogo otdela Glavnoy geo-
fizicheskoy observatorii im. A.I.Voyeykova (for Volokh, Gushchina,
Igrunov, Nechayev, Pokrovskaya, Trifonova, TSyganova). 3. Glavnoye
upravleniye Gidrometeorologicheskoy sluzhby SSSR (GUGMS)(for Kitaytsev,
Kuz'min, Olimpov, Skiteykin). 4. Glavnaya geofizicheskaya observatoriya
(GGO) (for Berlin, Nechayev, Rusin, Sherbakova). 5. Mestnyye upravleniya
Gidrometeorologicheskoy sluzhby (for Martynov, Simonov, Ivanov, Bes-
sonov).
(Meteorology—Observations)

SIMONOV, Ya.P.; SALEPOVA, A.I.; SMIRNOVA, A.I.; SYRTSOVA, Ye.M.; MIKHAYLOVA,
A.D.; YEFIMOVA, K.A.; MOROZ, V.F.; GUK, Yu.I.; NIKOLAYEVA, Z.A.;
AYZENBERG, M.M.; MIKHAYLOVA, K.L.; ROGOVSKAYA, Ye.G., red.;
VOLKOV, N.V., tekhn.red.

[Agroclimatic reference book on Nikolayev Province] Agroklima-
ticheskii spravochnik po Nikolaevskoi oblasti. Leningrad, Gidro-
meteor.izd-vo, 1959.   103 p.   (MIRA 13:2)

1. Kiyev. Gidrometeorologicheskaya observatoriya. 2. Nachal'nik
otdela agrometeorologii Kiyevskoy gidrometeorologicheskoy observa-
torii (for Salepova).
          (Nikolayev Province--Crops and climate)

SIMONOV, Ya.I.; SALEPOVA, A.I.; SMIRNOVA, A.I.; SYRTSOVA, Ye.M.;
ABOVICH, P.B.; AYZENBERG, M.M.; MIKHAYLOVA, K.L.; USHAKOVA,
T.V., red.; SERGEYEV, A.N., tekhn. red.

[Handbook on agricultural climatology in Zaporozh'ye Province]
Agroklimaticheskii spravochnik po Zaporozhskoi oblasti. Le-
ningrad, Gidrometeoizdat, 1959. 111 p.   (MIRA 17:4)

1. Ukraine. Upravleniye gidrometeorologicheskoy sluzhby.

SIMONOV, Ye., kand.tekhn.nauk

Inventing should and must be taught. Izobr.i rats.   no.1:
24-25   Ja   '60.   (MIRA 13:4)
        (Inventions)

SIMONOV, Ye.A.

       Manufacture of "Thermoblock" recuperator sections. Lit. proizv.
       no.1:37-38 Ja '61.   (MIRA 14:1)
            (Founding)   (Heat regenerators)

SIMONOV, N.A.

New methods for molding flanges and flywheels of lever shears.
Mashinostroenie no.1:107-108 Ja-F '62.   (MIRA 15:2)
                        (Molding (Founding))

STRONOV, YE.

Mountaineering

Mountain clumbers., Vokrug svet·, no. 3, 1952

SINEV, V, VE.

Mountaineering

Climbing to the summits, Vokrug sveta, no. 6, 1952.

Monthly List of Russian Accessions. Library of Congress October 1952. UNCLASSIFIED.

1. SIMONOV, YE.

2. USSR 600

4. Pamirs - Glaciers

7. On the greatest glacier in the world, Znan. sila, 22, No. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _____April_____ 1953, Uncl.

SIMONOV, Ye.D.; NOVOSPASSKIY, V.V., redaktor; RAKOV, S.I., tekhnicheskiy redaktor

[To the Ritsa Lake] K ozeru Ritsa. [Tekst E.D.Simonova, red. V.V. Novospasskii. Moskva, Izd-vo VTsSPS "Profizdat," 1954. 11 p.]
illus.
                                                              (MLRA 8:6)
        (Ritsa Lake--Guidebooks)

SIMONOV, Ye.D., redaktor; ROTOTAYEV, P.S., redaktor; BOROVIKOV, A.M., redaktor; BULGAKOV, N.V., redaktor; GARF, B.A., redaktor, GVOZDET-SKIY, N.A., redaktor; YEZERSKIY, Ye.M., redaktor; ZATULOVSKIY, D.M., redaktor; IVANOV, A.I., redaktor; KUZ'MIN, K.K., redaktor; NESTEROV, V.F., redaktor; SUSLOV, A.D., redaktor; TUSHINSKIY, O.K., redaktor; YUKHIN, I.V., redaktor; LEBEDEVA, N.G., redaktor; GOLI-TSYN, A.V., redaktor; KOSHELEVA, S.M., tekhnicheskiy redaktor

[Conouered peaks; annual publication of Soviet mountaineering for 1953] Pobezhdennye vershiny; ezhegodnik sovetskogo al'pinizma god 1953. Moskva, Gos. izd-vo geograficheskoi lit-ry, 1954. 606 p.
        (Mountaineering--Yearbooks)   (MIRA 8:7)

SIMONOV, Ye.

Highest peak in the world. Geog. v shkole no.1:29-38 Ja-F '54.
(MLRA 7:1)
(Everest, Mount)

SIMONOV, Ye.D.

Gorges of hot springs. Priroda 44 no.9:73-77 S '55. (MLRA 8:11)
(Caucasus--Springs)

SIMONOV, Yevg.

      Peak of friendship. Znan.sila 31 no.5:7-9 My '56.   (MLRA 9:8)
                              (Mountaineering)

BUNDEL', A.A., red.; GIPPENREYTER, B.Ye., red.; GVOZDETSKIY, N.A., red.;
        GREKOV, L.I., red.; KUZ'MIN, K.K., red.; LETAVET, A.A., red.;
        NEMYTSKIY, V.V., red.; ROTOTAYEV, P.S., red.; SIMONOV, Ye.D., red.;
        TUSHINSKIY, G.K., red.; YUKHIN, I.V., red.; DOBRONRAVOVA, K.O., red.;
        GLEIKH, D.A., tekhn.red.; MAL'CHEVSKIY, G.N., red. kart.

        [Conquered peaks of 1954; a yearbook of Soviet mountaineering]
        Pobezhdennye vershiny god 1954; ezhegodnik sovetskogo al'pinizma.
        [Moskva] Gos.izd-vo geogr.lit-ry, 1957. 431 p.   (MIRA 11:1)
                        (Mountaineering--Yearbooks)

BERKOVA, N.M.; SIMONOV, Ye.D., red.; GIPPENREYTER, Ye.B., red.;
    KIZEL', V.A., red.; KUZ'MIN, K.K., red.; LETAVET, A.A., red.;
    POLYAKOV, A.I., red.p ROTOTAYEV, P.S., red.; FILIMONOV, L.N.,
    red.; KHRGIAN, A.Kh., red.; YUKHIN, I.V., red.; KONOVALYUK,,
    I.K., mlad. red.; GOLITSYN, A.V., red. kart; ARDANOVA, N.P.
    tekhn. red.

[Conquered summits; Soviet alpinism between 1958 and 1961] Po-
bezhdennye vershiny; sbornik sovetskogo al'pinizma, 1958-1961.
Moskva, Geografgiz, 1963. 406 p.   (MIRA 16:6)
                        (Mountaineering)

NESMYEYANOV, An.N.; DZANTIYEV, B.G.; POZDEYEV, V.V.; SIMONOV, Ye.F.

Reaction of recoil atoms of tritium with benzene. Radiokhimia 4
no.1:116-122 '62.
(MIRA 15:4)

(Tritium) (Benzene)

FEDOSEYEV, V.M.; SIMONOV, Ye.F.; SILAYEV, A.B.

Synthesis of 2,3-dimercaptopropanol ethers. Zhur.ob.khim. 32
no.9:3083-3088 S '62.   (MIRA 15:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
          (Propanol)   (Ethers)

SIMKOV, M. P.; SHCHERBAKOV, A. B.

"Reactions of hot tritium atoms with amino acids."

report presented at IAEA Symp on Chemical Effects Associated with Nuclear Reactions and Radioactive Transformations, Vienna, 7-11 Dec 64.

DUR'YANOV, V.B.; SIMONOV, Yu.F.

Complex investigation of the accuracy of the quantitative
determination of norleucine with ninhydrin. Vest. Mosk. un. Ser.
2:Khim. 20 no.4:30-33 Jl-Ag '65.   (MIRA 18:10)

1. Kafedra radiokhimii Moskovskogo gosudarstvennogo universi-
teta.

SIMONOV, Ye.F.; NESMEYANOV, An. N.

Radiation conservation of amino acids in the course of their
interaction with tritium recoil atoms. Vest. Mosk. un. Ser.
2:Khim. 20 no. 5:28-30 S-O '65.   (MIRA 18:12)

1. Kafedra radiokhimii Moskovskogo gosudarstvennogo universiteta.
Submitted July 21, 1965.

L 23225-66   EWT(m)   DIAAP

ACC NR: AP6013601   SOURCE CODE: UR/0189/65/000/005/0028/0030

AUTHOR: Simonov, Ye. F.; Nesmeyanov, A. N.

ORG: Department of Radiochemistry, Moscow State University (Kafedra radiokhimii Moskovskogo gosudarstvennogo universiteta)

TITLE: Radiation preservation of aminoacids during the interaction with tritium-recoil atoms

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 5, 1965, 28-30

TOPIC TAGS: amino acid, neutron irradiation, radioactive decay, lithium compound, tritium, alpha particle

ABSTRACT: The effect of the relative content of lithium salt in irradiated specimens on the radiation survival of a mother compound and on the yield of the basic decomposition products and their specific activities at low irradiation times was studied. Specimens of l-glutamic acid, dl-methionine and l-cysteine with the relative contents of lithium carbonate of 91, 80, 67, 50, 33, 20 and 9% were irradiated. The total weight of the irradiated specimens was 20-22 mg. Since the radiation composition during neutron irradiation of mixtures of organic substances with lithium salts is somewhat higher than in the absence of the latter, the lithium salt of glutamic acid was also irradiated for comparison. Quartz ampules containing the specimens were evacuated to a pressure of 10^{-2} mm Hg, sealed, placed in aluminum cases, and irradiated for 15 minutes by a stream of slow neutrons of $0.87 \cdot 10^{13}$ cm^{-2}.

Card 1/2

UDC: 541.15+539.163

L 23225-66
ACC NR: AP6013601

sec^{-1}. It was shown that the activity of HT for all aminoacids studied reaches a maximum at the relative contents of 50% lithium salt and that the share of activity attributable to CH_3T of the total activity of the gaseous phase for glutamic acid is linearly varied from 10% for a specimen with 80% lithium salt to 63% for a specimen with 9% lithium salt. Thus, the significant contribution of alpha-particles to the radiation decomposition of the mother compound becomes apparent at low relative contents of the lithium salt even at small irradiation times. Tabulated data indicates that the maximum radiation preservation of the mother compound for the acids studied is observable at 33% relative contents of lithium salt in the irradiated specimens which corresponds to the equimolar ratio of the irradiated components.

Orig. art. has: 2 tables. [JPRS]

SUB CODE: 07 / SUBM DATE: 21Jul65 / ORIG REF: 003 / OTH REF: 001

AUTHORS: Kurochkin, B.N., Simonov, Ye.I., Kalashnikov, L.A.,
SOV/133-59-5-7/31
             Yemets, L.K. and Zelenskiy, V.D.

TITLE: Operation of Open-hearth Furnaces on Natural Gas
             (Rabota martenovskikh pechey na prirodnom gaze)

PERIODICAL: Stal', 1959, Nr 5, pp 407 - 413 (USSR)

ABSTRACT: At the end of 1957, two works were operating open-hearth
             furnaces on natural gas with a pressure of 1 and 10 atm.,
             respectively. The investigation carried out by VNIIMT
             on these furnaces indicated that the gas pressure, the
             nature and pressure of the atomising medium, the rate of
             consumption of the carburising medium and some other
             factors have a considerable influence on the efficiency
             of utilisation of natural gas as an open-hearth fuel.
             When the Libknekht Works started operation on natural gas,
             its pressure was fired at 2.5 - 3.0 atm. A study of the
             thermal operating conditions of a 185-ton furnace with
             air or steam as atomising agents for the carburising oil
             (up to 30%) was carried out. For comparison a preliminary
             investigation of the furnace operation when fired with
             fuel oil was made. Characteristic features of furnace

Card1/3

SOV/133-59-5-7/31

Operation of Open-hearth Furnaces on Natural Gas

design are given (Figure 1). Standard operating conditions when firing with oil are shown in Table 1 and a comparison of operating indices with oil and natural gas in Tables 2 and 5. The dependence of the mean flame radiation on the rate of consumption of oil (for oil-firing) - Figure 5 and the dependence of the radiation of the oil flame on the type of atomising agent - Figure 6; the above two relationships for gas-oil flame are shown in Figures 7 and 8, respectively. Recommended thermal conditions of furnace operation on firing with natural gas are given in Table 3. It was found that on transferring from oil to natural-gas firing, the productivity of the furnace did not decrease and the consumption of fuel somewhat decreased. In view of a strong influence of the rate of consumption and pressure of the atomising agent on radiation characteristics of the flame, the determination of rational values for the above parameters is necessary in each individual case. On transferring furnaces to natural-gas firing, the above presents the main problem.

Card2/3

Operation of Open-hearth Furnaces on Natural Gas SOV/133-59-5-7/31

There are 8 figures and 5 tables.

ASSOCIATIONS: VNIIMT, Zavod im. K. Libknekhta (imeni
Libknekht Works)

Card 3/3

SIMONOV, Ye.K., inzh.; MINEYEV, B.V., inzh.; RYSEV, G.S., inzh.;
   YANKELEVICH, M.D., inzh.

   The 1 PDN-2 loading and transporting machine. Shakht. stroi.
   8 no.2:19-20 F '64.   (MIRA 17:3)

   1. Nauchno-issledovatel'skiy i proyektno-konstruktorskiy
   institut gornogo i obogatitel'nogo oborudovaniya, Sverdlovsk.

1. STMCHCV, Ye V.

2. US.R (6CC)

4. Water, Underground

7. Letecting the elements of an underground stream by the newest methods.
   /Abstract/ Izv. Glav. upr. geol. fon. nc. 3, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

15-57-1-1030

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1,
                   p 165 (USSR)

AUTHOR: Simonov, Ye. V.

TITLE: The Core Lifter of the All-Union Scientific Research
            Institute of Hydrogeology and Engineering Geology
            (Gruntonos "VSEGINGEO")

PERIODICAL: Nauch-tekhn. inform. M-vo geol. i okhrany nedr, 1955,
            Nr 1, pp 69-71

ABSTRACT: The described core lifter acts as the drilling tip on
            a rotary drilling rig that flushes the hole bottom
            with drilling mud. It is used for drilling in uncon-
            solidated complexes of dry and saturated rocks. It
            permits the extraction of a single piece of unbroken
            core (100 percent). It is used principally in drilling
            for engineering geological purposes. The core lifter
            may be made with any diameter. It consists of a

Card 1/2

The Core Lifter (Cont.)

15-57-1-1030

double-column pipe: a drilling pipe and a core-collecting receptacle.
The author discusses the design of the instrument, the drilling pro-
cedure, and the extraction of the single-piece core. He presents a
diagram of the core lifter.
Card 2/2

S. M. S.-Ye.

DUBROVKIN, V.L.; SIMONOV, Ye.V.

Methods for sampling water from wells in the case of
nonhomogeneous chemical composition of underground waters.
Razved.i okh.nedr 21 no.3:48-53 My-Je '55.   (MLRA 9:12)

(Water, Underground)

SIMONOV, Ye.V.; KOSYKH, L.S.; TESLYA, A.G.

    New way of lit-par-lit sampling of water-bearing horizons.
    Razved. i okh. nedr 29 no.9:27-32 S '63.   (MIRA 16:10)

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

SIMONOV, YE. YE

ACCESSION NR: AT4042680   s/0000/63/000/000/0182/0185

AUTHOR: Zharov, S. G.; Il'in, Ye. A.; Kovalenko, Ye. A.; Kalinichenko, I. R.;
Karpova, L. I.; Mikerova, N. S.; Osipova, M. M.; Simonov, Ye. Ye.

TITLE: The study of the prolonged effects on man of an atmosphere with an
increased CO_2 content

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963.
Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy
konferentsii. Moscow, 1963, 182-185

TOPIC TAGS: carbon dioxide effect, man, pressure chamber, acidosis, hypodynamia,
fatigue

ABSTRACT: Two experiments were performed in which human subjects were kept in
pressure chambers with a capacity of 7 cubic meters at an air temperature of 20±
2°C and a relative humidity of 40 to 60%. Oxygen content varied from 19 to 22%.
In the first experiment, the CO_2 level was maintained at 1% and in the second
experiment at 2%. Two subjects were used in each experiment; each experiment last-
ed thirty days. Examination of the physiological indices indicates that the

Card 1/2

ACCESSION NR: AT4042680

presence of men in an atmosphere of limited capacity with an increased CO_2 content leads to acidosis, hypodynamia, and fatigue. The intensity of acidosis increases with an increase of CO_2 content from 1% to 2% and increases with the duration of time spent in the chamber. Subjects who remained in the test chamber for thirty days with a CO_2 content equal to 1% maintained their work capacity on a sufficiently high level. When exposed to physical loads, subjects who had spent thirty days in an atmosphere of 2% CO_2 manifested a sharp decrease in work capacity and a significant strain on the functions of the organism. However, the functional changes observed were completely reversible.

ASSOCIATION: none

SUBMITTED: 27Sep63

ENCL: 00   SUB CODE: LS

OTHER: 000

NO REF SOV: 000

Card 2/2

SIMONOV, Ye.Ye.; BALAKHOVSKIY, I.S.

          Cytophotometer. Lab. delo no.3:184-186 '65.

                                       (MIRA 18:3)

SIMONOV, Yu.; NAYDEROV, V.

Structural stability of a linear four-terminal network. Elektrosviaz'
16 no.7:71-72 Jl '62.
(Electric networks)
(MIRA 15:7)

86922

S/056/60/039/005/039/051
B006/B077

24.6900

AUTHORS: Simonov, Yu. A., Ter-Martirosyan, K. A.

TITLE: About a Semi-analytical Solution of the Equations of the
               Chew-Mandelstam Type

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
               Vol. 39, No. 5(11), pp. 1442 - 1449

TEXT: A simple method is proposed for solving equations of the Chew-
Mandelstam type, which leads quickly to an approximate solution and is
analogous to the known method of Dalitz, Dyson, and Castillejo in the low
energy range. Here, this method is applied to the simplest cases, that is
the solution of the Chew-Mandelstam equations describing the interaction
between neutral and charged pions. The results obtained in the first ap-
proximation for charged pions are compared with the numerical calcula-
tions by Chew, Mandelstam, and Noyes. A graphical comparison of the re-
sults in the first and second approximation of the functions

$$-(\pi\eta/2)\sqrt{x}\,\mathrm{ctg}\,\delta = -(\pi\eta/2)\mathrm{Re}\,h(x)$$ showed that the corrections of the

Card 1/3

86922

About a Semi-analytical Solution of the
Equations of the Chew-Mandelstam Type

second approximation can be neglected. An exception is the case of those
Λ-values close to the limiting value where $\alpha_1(\Lambda)$ becomes large. But this
range is small. Furthermore the range where the Chew-Mandelstam equa-
tions are valid is found between $0 \leqslant \nu \leqslant 3$. In this range the corrections
are the least and at $\nu = 0$ the first and second approximation are iden-
tical. The first approximation obtained here is nearly equal to the
numerical solution of the Chew-Mandelstam equation for the neutral-meson
interaction amplitude which was found by Ye. P. Vedeneyev and
A. L. Krylov. The graphical comparison of the first approximation with
the results of a numerical solution of the Chew-Mandelstam equations for
the scattering of charged mesons for the functions $-5\lambda\sqrt{x}$ ctg δ_0 and

$-2\lambda\sqrt{x}$ ctg δ_2 shows that for the range $0 \leqslant \nu \leqslant 3$ agreement is very good.
This solution is quite similar to the one obtained by Chew, Mandelstam,
and Noyes in the case of a predominance of the S-wave. The first ap-
proximation proved to be sufficient in all cases and by applying the
given method it is easy to determine this approximation. This method
can be applied to similar problems as e.g. to π N- and π K-scattering.

Card 2/3

About a Semi-analytical Solution of the
Equations of the Chew-Mandelstam Type

86922
S/056/60/039/005/039/051
3006/3077

There are 6 figures, 2 tables, and 8 references: 1 Soviet and 7 US.

SUBMITTED: July 23, 1960

Card 3/3

S/0?6/61/040/002/035/047
B??2/B2?4

AUTHOR: S?m?n?v, Yu A

TITLE: The relationship b?tw??n the ?q?ations for the partial
          ?mpl?t?des and the ?q??t???s ?f the spectral functions

PERIODICAL: ?h?r??l ?ksperimental?? ? ?? ????ch?skoy fiziki, v. 40,
               n? ?, 196? ??? ??

TEXT.   F?r t?? ???? ?f ???scatt?r??? ?f ?harg?d p??ns G. Chew and S.
Mand?l?ta? (Phys B?? ??? 48? ??50) h?v? ??tablished equations which
contain the ??rt?al amp?itud?s A   A.   In th? pr?sent paper, it is shown
h?w, ??tart??g from the ?quat??n? f?r th? ?re?t?al functions, it is possible
t? g?? ??t ?? ?quatt?ns ??rr??p?nd??? ?? ?h??? ?f Chew and Mandelstam
yet ??r? ??n??al ??n?? th??? ??nt??? n?? ?nly th? partial amplitudes A
and A?, b?? ?l? th? p?rt?a? ?mp?itud?? A A A?   ?. In ?rder to s?mpl?
fy th? ?a???l?t??n? ?nly th? ?a?? ?f ?? ??atter?ng of neutral mesons is
??n??d???d   H? pr?c??d? fr?? th? r?pr???nta?i?ns f?r the spe?tral func-
t??ns f ?r? ? wh??h ??? ?n?wn t? K   A   ??? M?t??r?gan ?ead t? the
C?n?? ?

The relationship between the   S/0 6/61/040/002/035/047
                                                B 12/B214

representation of Chew and Mandelstam for S waves when neglecting the
spectral functions.   The result obtained has the form:

$$f(c) = \ldots$$

$$= \frac{1}{2} \int \ldots \quad \text{Here} \quad \omega(c,s)$$

$= \ldots$ and P_l are the Legendre polynomials. The dis-
advantage of this representation is that a term by term integration of the
right hand side of the expression with respect to s leads to divergences,
while in the original representation the integrals of the spectral func-
tions converge.   Finally, the case of scattering of charged pions
is discussed. The calculations are not given but more complicated.   There
are 5 references: 2 Soviet-bloc and 3 non Soviet-bloc.
SUBMITTED: August 11, 1960
Card 2

SIMONOV, Yu.A.; TER-MARTIROSYAN, K.A.

Equations for the spectral functions of charged π-mesons.
Zhur. eksp. i teor. fiz. 40 no.4:1172-1178 Ap '61.   (MIRA 14:7)

1. Institut eksperimental'noy i teoreticheskoy fiziki AN SSSR.
     (Mesons--Scattering) (Integral equations)

S/056/62/043/005/019/058
B102/B104

AUTHOR: Simonov, Yu. A.

TITLE: Investigation of four-fermion interaction by means of unitarity
               and analyticity

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
               no. 5(11), 1962, 1678-1683

TEXT: A method proposed by V. N. Gribov (Nucl. Phys. 22, 249, 1961) is
used to investigate the behavior of the four-fermion interaction amplitudes
at high energies. Such an analysis requires equations expressing the
spectral amplitude functions in terms of absorption parts of these
amplitudes. The analyticity and unitarity conditions (Phys. Rev. 119, 467,
1960; Ann. of Phys. 10, 552, 1960) are used to obtain these equations, for
which, in contrast to the perturbation theory, no inconsistencies arise at
high energies. The equations are satisfied if the amplitudes are assumed
to increase exponentially with energy at infinity, and correlations arise
between the orders of growth n_j of all five independent amplitudes. The
relations derived are used to investigate the asymptotic behavior of
Card 1/4

S/056/62/043/005/019/058
B102/B104

Investigation of four-fermion ...

fermion-fermion and fermion-antifermion scattering amplitudes. For the five independent amplitudes

$$4\pi E\varphi_1 = 4\pi E \langle + \tfrac{1}{2} + \tfrac{1}{2} | \varphi | + \tfrac{1}{2} + \tfrac{1}{2} \rangle =$$
$$= \tfrac{1}{2} m^2 (1 + x)(A_S + A_V + A_T + A_A) + 2(p^2 A_V - E^2 A_A - m^2 A_T);$$

(23)

(24)

$$4\pi E\varphi_2 = 4\pi E \langle + \tfrac{1}{2} + \tfrac{1}{2} | \varphi | - \tfrac{1}{2} - \tfrac{1}{2} \rangle = 2(E^2 + p^2) A_T + 2m^2 A_A +$$
$$+ \tfrac{1}{2}(x - 1)[E^2 A_S + m^2 A_V + (E^2 + p^2) A_T + m^2 A_B + p^2 A_P],$$

$$4\pi E\varphi_3 = 4\pi E \langle + \tfrac{1}{2} - \tfrac{1}{2} | \varphi | + \tfrac{1}{2} - \tfrac{1}{2} \rangle =$$ (25)
$$= \cos^2(\theta/2) \{ m^2 (A_S + A_T) + (E^2 + p^2)(A_V + A_A) \},$$

$$4\pi E\varphi_4 = 4\pi E \langle + \tfrac{1}{2} - \tfrac{1}{2} | \varphi | - \tfrac{1}{2} + \tfrac{1}{2} \rangle =$$ (26)
$$= \sin^2(\theta/2) \{ A_S E^2 + m^2 (A_V + A_A + A_T) - p^2 A_P \},$$

$$4\pi\varphi_5 = 4\pi \langle + \tfrac{1}{2} + \tfrac{1}{2} | \varphi | + \tfrac{1}{2} - \tfrac{1}{2} \rangle =$$
$$= - \tfrac{1}{2} m \sin\theta \{ A_S + A_V + A_T + A_A \};$$ (27)
$$x = \cos\theta, \qquad s = 4(p^2 + m^2) = 4E^2.$$

Card 2/4

Investigation of four-fermion ...

the following correlations are found:

$$d\sigma_j / d\Omega = |\varphi_j|^2, \quad \text{Im } \varphi_1(\theta = 0) = p\sigma^T_{++} / 4\pi, \quad \text{Im } \varphi_3(0) = p\sigma^T_{+-} / 4\pi; \tag{28}$$

$$\tfrac{1}{2} \text{Im } [\varphi_1(0) + \varphi_3(0)] = p\sigma^T / 4\pi, \tag{29}.$$

For the n_j several inequalities are obtained. From

$$n_I = n_{I'}, \quad n_S = n_V + 1 = n_T + 1, \quad n_S > n_A > n_S - 2, \quad n_P > n_S. \tag{21}$$

it can be concluded that with increasing energy the fermion-antifermion scattering cross sections behave in the same way as the fermion-fermion scattering cross sections although the coefficients of the power functions of energy may be different. For the limits $0 \leqslant n_S, n_P \leqslant 1, -1 \leqslant n_V, n_T, n_A \leqslant 0$ is obtained. If σ^T and $|d\sigma_j/dt|_{t=0}$ remain constant with $s \to \infty$ (diffraction), $n_S = n_P = 1, n_V = n_T = 0, -1 \leqslant n_A \leqslant 0$, and $f_1, f_3, f_5 \sim E^{2n_S-1}, f_2, f_4 \sim E^{2n_P-1}$. σ^T is the total cross section averaged

Card 3/4

Investigation of four-fermion ...

S/056/62/043/005/019/058
B102/B104

over the spins and $\sigma^{m}_{++(+-)}$ denote the total interaction cross section for fermions with spins parallel (antiparallel) to momentum.   Abstracter's note: One figure mentioned but not given.

SUBMITTED: January 30, 1962 (initially)
              May 22, 1962 (after revision)

Card 4/4

S/056/62/043/006/050/067
B102/B186

AUTHOR: Simonov, Yu. A.

TITLE: Multiple dispersion relations

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
                no. 6(12), 1962, 2263-2272

TEXT: The Mandelstam representation of the double dispersion relations for
scattering amplitudes is generalized for the case of multi-channel processes,
i.e. for many-tailed graphs with anomalous mass ratio. To construct the
multiple dispersion relations for the amplitudes in perturbation theory the
integral Bergman-Weil representations are used. The procedure of generaliza-
tion is demonstrated for a simple triangle graph (Fig. 1), for two as well
as for three variables (squares of the external momenta). In the latter
case the dispersion relation with respect to x if y+z > 0 is obtained from

$$F_{.}(p_1^2,\ p_2^2,\ p_3^2) = \frac{1}{2\pi} \int \frac{d\alpha_1 d\alpha_2 d\alpha_3 \delta\,(1 - \alpha_1 - \alpha_2 - \alpha_3)}{\alpha_1\alpha_2 p_3^2 + \alpha_2\alpha_3 p_1^2 + \alpha_3\alpha_1 p_2^2 - \sigma} ,\qquad (2)$$

by substituting the momentum squares p_i^2 by the "cosines" y_{ik} and using the
Card 1/4

Multiple dispersion relations

same parameters as Karplus et al. (Phys. Rev. 111, 1187, 1958)

$$F(x, y, z) = \frac{1}{\pi} \int_{-\infty}^{-1} \frac{A(x', y, z) dx'}{x' - x} . \qquad (4),$$

If $m_1 = m_2 = m_3$,

$$A(x, y, z) = \frac{1}{2\sqrt{\Lambda}} \ln \frac{(1-x)(y+z-x-1) + \sqrt{(x^2-1)\Lambda}}{(1-x)(y+z-x-1) - \sqrt{(x^2-1)\Lambda}}, \qquad (5)$$

$$\Lambda = (1-x)^2 + (1-y)^2 + (1-z)^2 - 2(1-x)(1-y) -$$
$$- 2(1-x)(1-z) - 2(1-y)(1-z).$$

The singularities of the amplitudes are studied and it is shown that with certain values of the variables a new singularity arises (not found by Karplus et al.) that cannot be obtained by the Landau method. By a proper choice of the section (cf. Fig. 3) the singularity can be eliminated from the physical sheet. With this anomalous singularity at x_0 $(\Theta_x + \Theta_y + \Theta_z = 2\pi)$

Card 2/4

Multiple dispersion relations

the dispersion relation becomes

$$F(x, y_0, z) = \frac{1}{\pi} \int_{-\infty}^{-1} \frac{A(x', y_0, z) dx'}{x' - x} + \frac{1}{\pi} \int_{C} \frac{dx'}{x' - x} \frac{2\pi i}{2 \sqrt{\Lambda(x', y_0, z)}}. \qquad (8)$$

where the zeros of (x, y, z) are

$$x_+ = 1 - (\sqrt{1-y} + \sqrt{1-z})^2, \quad x_- = 1 - (\sqrt{1-y} - \sqrt{1-z})^2. \qquad (9)$$

$$A(x', y_0, z) \sim -\pi i / \sqrt{(x' - x_+)(x' - x_-)}, \quad x' \sim x_-.$$

$F(x, y_0, z)$ has also a singularity at $x = x_-$. The Bergman-Weil representation is rewritten for the amplitudes considered for two variables.

$$F(x, y, z) = \frac{1}{2\pi i} \int_{S_1} \frac{dx'}{x' - x} \int_{S_a} \frac{dy' Q_a(x', y': x, y)}{k(x, y, z) + r' \Lambda(x, y, z)} \frac{1}{2\sqrt{\Lambda(x', y', z)}} +$$

$$+ \frac{1}{2\pi i} \int_{S_1} \frac{dy'}{y' - y} \int_{S_a} \frac{dx' P_a(x', y': x, y)}{k(x, y, z) + r' \Lambda(x, y, z)} \frac{1}{2\sqrt{\Lambda(x', y', z)}}. \qquad (16)$$

Card 3/4

Multiple dispersion relations

S/056/62/043/006/050/067
B102/B186

Finally it is shown, that with three variables (x,y,z) the Bergman-Weil relation can be integrated in regions where the variables are real. There are 3 figures.
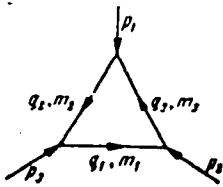
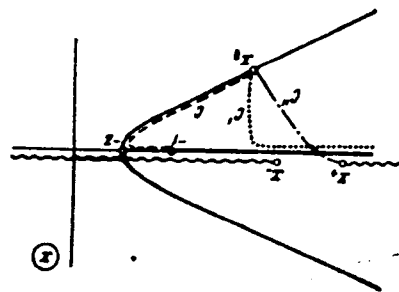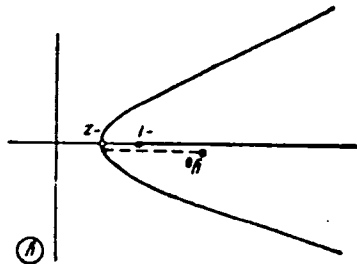SUBMITTED: July 7, 1962

Fig. 1

Fig. 3

Card 4/4

MALINOVSKIY, T.I.; SIMONOV, Yu.A.

Crystal structure of cadmium bromide dipyridinate.
Dokl. AN SSSR 147 no.1:96-98 N '62.   (MIRA 15:11)

1. Predstavleno akademikom N.V. Belovym.
    (Cadmium bromide)   (Crystallography)

SIMONOV, Yu.A.; ABLOV, A.V.; MALINOVSKIY, T.I.

Crystalline structure of diacetate diaminocopper. Kristallo-
grafiia 8 no.2:270-272 Mr-Ap '63.   (MIRA 17:8)

1. Institut fiziki i matematiki AN Moldavskoy SSR.

L 10212-63   EWT(1)/FCC(w)/BDS—AFFTC/ASD—IJP(C)

ACCESSION NR: AP3000059   S/0056/63/044/005/1622/1627
                                                                 53
                                                                 51
AUTHOR: Simonov, Yu. A.

TITLE: Integral representation of a square diagram with an anomalous mass ratio

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1622-1627

TOPIC TAGS: quantum field theory, strong interactions, double dispersion relations, square Feynman diagram

ABSTRACT: The Bergman-Weil integral representation is employed to write a double dispersion relation (in energy and momentum transfer) for a square diagram with arbitrary stable masses; this relation is valid in the presence of anomalous singularities, when the Mandelstam representation breaks down. The most general case of arbitrary internal masses is considered, and the method of an earlier paper by the author (Zhurnal eksperimental'noy i teoreticheskoy fiziki, vol. 43, 2263, 1962) is employed. The relation derived consists of a sum of three integrals, the first of which coincides with the usual Mandelstam representation. The lat two integrals vanish upon transition to a normal mass

Card   1/2

L 10212-63
ACCESSION NR: AP3000059 2

ratio. The method makes it also possible to write down single-variable
dispersion relations in an arbitrary region of variables in an easy manner,
without using the rather laborious method of interlacing of contours. "The
author is grateful to K. A. Ter-Martirosyan for his interest in this work and
comments." Orig. art. has: 16 formulas and 3 figures.

ASSOCIATION: none

SUBMITTED: 08Dec62   DATE ACQ: 12Jun63   ENCL: 00

SUB CODE: PH   NR REF SOV: 003   OTHER: 007

Card   2/2

RUDIK, A.P.; SIMONOV, Iu.A.

New method for studying the characteristics of Feyman diagrams.
Zhur. eksp. i teor. fiz. 45 no.4:1016-1029 O '63. (MIRA 16:11)

1. Institut teoreticheskoy i eksperimental'noy fiziki.

S/0056/64/046/003/0985/0993

ACCESSION NR: AP4025931

AUTHOR: Simonov, Yu. A.

TITLE: Regge trajectories in the Bethe Salpeter equation

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 46, no. 3, 1964, 985-993

TOPIC TAGS: Regge trajectory, Bethe Salpeter equation, relativistic model, ladder diagram, asymptotics of ladder diagram, forward scattering, Froissart theorem, unitarity condition, ghost state, crossing symmetry

ABSTRACT: Since the properties of Regge trajectories have been investigated little in relativistic theory, the author uses the Bethe-Salpeter equation as a relativistic model and derives an equation which determines the Regge trajectories for the sum of ladder diagrams (although the method proposed can be applied to a Bethe-

Card 1/3

ACCESSION NR: AP4025931

Salpeter equation with any kernel). The behavior of the trajectory $\ell(s)$ as a function of s and of the coupling g^2 is examined. It is shown by expanding $\ell(s)$ in powers of g^2 that the sum of the principal terms in the asymptotic expressions for the ladder diagrams leads to the first two terms in this expansion, i.e., $\ell(s) = \ell_0 +$ $+ g^2 \ell_1(s)$. The reason for this situation is explained. The equation for $\ell(s)$ is solved exactly for the case of forward scattering. An analytic expression is given for $\ell(g^2)$ when $\mu = 0$, and numerical calculations are made for several values of μ^2/m^2. It is shown that $\ell(_0)$ can become larger than unity, thus violating the Froissart theorem (M. Froissart, Phys. Rev. v. 123, 1053, 1961), and for forward scattering $\ell(\lambda_0)$ becomes positive, leading to a "ghost" state.

Both features are connected with the character of the model, namely that the sum of the ladder diagrams does not satisfy the unitarity condition in the t channel, nor does it satisfy the crossing symmetry

Card 2/3

ACCESSION NR: AP4025931

condition.   "The author is grateful to G. M. Adel'son-Vel'skiy,
B. L. Ioffe, A. P. Rudik, K. A. Ter-Martirosyan, and V. M. Terent'-
yev for interesting discussions, and also to G. M. Adel'son-Vel'skiy
and F. M. Filler for the numerical solution of the equations." Orig.
art. has: 4 figures, 33 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 10Aug63   DATE ACQ: 16Apr64   ENCL: 00

SUB CODE: PH   NR REF SOV: 002   OTHER: 007

Card   3/3

L 31959-65   EWT(1)   IJP(c)
ACCESSION NR: AP5004398   8/0056/65/048/001/0242/0252

AUTHOR: Simonov, Yu. A.

TITLE: Motion of singularities of partial amplitudes in the complex angular
momentum plane

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 1, 1965,
242-252

TOPIC TAGS: Regge pole, angular momentum, partial amplitude, unitarity relation,
particle scattering

ABSTRACT: Using the explicit form of the many-particle unitarity relations pro-
posed by Gribov, Pomeranchuk, and Ter-Martirosyan, the author investigates in de-
tail the occurrence, motion, and character of the singularities of the partial
scattering amplitude in the j-plane ($j =$ angular momentum). It is shown, in
particular, that singularities dependent on the masses of the particles go off
the first sheet in the j-plane at threshold values of the energy. Assuming that
the particles are related to the definite Regge trajectories, it is possible to

Card 1/2

L 31959-65   4

ACCESSION NR: AP5004398

include the three-particle unitarity relation in the four-particle relation.
Then the three-particle singularities also pass out into the second sheet in the
four-particle branching in the j-plane. A similar situation occurs when the
(n - 1)-particle and (n - 2)-particle unitarity relations are included in the
n-particle relation. A brief analysis is presented of the j-plane singularities
that occur when the expression for a Regge trajectory itself has a singularity or
a zero-derivative at some point. "The author is thankful to V. N. Gribov, I. Ya.
Pomeranchuk, and K. A. Ter-Martirosyan for useful discussions." Orig. art. has:
11 figures and 14 formulas.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki GKAE (Institute
of Theoretical and Experimental Physics GKAE)

SUBMITTED: 29Jun64   ENCL: 00   SUB CODE: NP, GP

NR REF SOV: 001   OTHER: 003

Card 2/2

L 29659-66   EWT(1)
ACC NR: AT6012695   SOURCE CODE: UR/3138/65/000/384/0001/0020

AUTHOR: Simonov, Yu. A.

ORG: Institute of Theoretical and Experimental Physics of the State Committee on
the Use of Atomic Energy SSSR, Moscow (Institut teoreticheskoy i eksperimental'noy
fiziki Gos. komiteta po ispol'zovaniyu atomnoy energii SSSR)

TITLE: The three body problem. Complete system of angle functions

SOURCE: USSR. Gosudarstvennyy komitet pi ispol'zovaniyu atomnoy energii. Institut
teoreticheskoy i eksperimental'noy fiziki. Doklady, no. 384, 1965. Zadacha trekh
tel. Polnaya sistema uglovykh funktsiy, 1-20

TOPIC TAGS: three body problem, wave function, group theory, harmonic function,
polynomial, quantum number

ABSTRACT: The author develops a method of constructing a complete system of wave
functions for each value of the total angular momentum L, for a system of three
particles, making use of the fact that such wave functions depend on two coordinate-
difference vectors and should be a representation of the permutation group of three
particles. After separating the motion of the center of mass of the system, the
state of the system is described in terms of a system of harmonic homogeneous poly-
nomials in six-dimensional space, realizing the representation of the rotation
group in this space. The coefficients of the expansions of these functions in

Card 1/2

L 29659-66
ACC NR: AT6012695   4

terms of the angular components of the harmonic polynomials are then determined.
Explicit forms are written out for the case when the total angular momentum of the
system is equal to zero. The functions for this case are characterized by the
values of the global six-dimensional angular momentum (which is an arbitrary posi-
tive even number) and by a number v, which takes on values from $-K/2$ to $K/2$ in
steps of 2. Symmetrical and antisymmetrical functions correspond to values of v
that are multiples of 3. The expressions obtained in this article will be used in
a second article (YaF. v. 3, 1032, 1966) to obtain equations for the binding energy
and wave function of a balanced system of three bodies and for concrete calcula-
tions in the case of tritium and He^3. The idea of the method and the principle of
constructing the total system can be used in the case of four or more particles,
too. The author thanks A. M. Badalyan who noted certain shortcomings in the
original draft and made valuable remarks. The author also thanks Ya. A. Smorodin-
skiy, K. A. Ter-Martirosyan, and I. S. Shapiro for useful discussions, remarks,
and suggestions. Orig. art. has: 4 figures, 38 formulas, and 2 tables.

SUB CODE: 20/   SUBM DATE: 22Sep65/   ORIG REF: 004

Card 2/2 C V

L 01071-67   EWT(d)   IJP(c)

ACC NR: AP6028206   SOURCE CODE: UR/0367/66/003/006/1032/1047

AUTHOR: Badalyan, A. M.; Simonov, Yu. A.

ORG: none

TITLE: Three body problem. Equation for partial waves

SOURCE: Yadernaya fizika, v. 3, no. 6, 1966, 1032-1047

TOPIC TAGS: wave, wave equation, three body problem, wave function, Schroedinger equation, functional equation, partial wave

ABSTRACT: The complete system of functions constructed in [Yu. A. Simonov. YaF, 3,4, 1966] is used to expand the three-particle wave function. The Schroedinger equation for three particles with an arbitrary potential is transformed into a connected system of equations for the partial waves, numbered by the momentum K in the six-dimensional space and by the index ν. The partial waves depend on a single variable, the six-dimensional distance ρ. The potentials enter into the equations as the matrix elements $U_{KK'}^{\nu\nu'}$, the properties of which are investigated in detail. The relative value of $\chi_K^\nu(\rho)$ for various K is estimated.

Card 1/2

L 01071-67
ACC NR: AP6028206

It is shown that $\sim \varkappa R$ partial waves, with $\varkappa = \sqrt{2m\varepsilon/\hbar^2}$, are necessary to describe a system with the dimensions R and binding energy ε. Partial waves with $K \gg \varkappa R$ decrease rapidly. The method can be applied with best advantage to H^3 and He^3. Orig. art. has: 75 formulas. [Authors' abstract]   [AM]

SUB CODE: 20/ SUBM DATE: 25Jan66/ ORIG REF: 002/

Card 2/2   vlr

GEDYMIN, A.V.; ZVORYKIN, K.V.; SIMONOV, Yu.G.

Socialist organization of a territory and tasks of geography. Vop. geog. no.39:90-102 '56.
(MLRA 9:11)

(Geography)

14-57-6-11990

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6,
                    p 48 (USSR)

AUTHOR: Simonov, Yu. G.

TITLE: Distribution of Solar Energy on Slopes of Varying
             Steepness and Exposure on the Plains Region at the
             50th Parallel of North Latitude (Raspredeleniye
             solnechnoy energii po sklonam razlichnoy krutizny
             i ekspozitsii v ravninnykh usloviyakh na 50° s. sh.)

PERIODICAL: Uch. zap. Mosk. un-ta, 1956, Nr 182, pp 197-201

ABSTRACT: The article presents the tables of solar energy
             received by the slopes of 3°, 7°, 12°, 25° and 45°.
             The energy was measured in percent of energy received
             by a horizontal plane, and the slopes were exposed
             along the principal compass directions. The obser-
             vations were conducted on the 16th day of each month.
             From these data the author drew up circular diagrams

Card 1/2

14-57-6-11990

Distribution of Solar Energy (Cont.)

of energy distribution at the 50th parallel of north latitude. The diagrams show that diversity in energy received by different slopes in the plains region is greatest in winter and smaller in spring and autumn.. In summer, only the steepest of slopes (more than 25°) show any difference in the amount of energy received.

L. M.

Card 2/2

SIMONOV, Yu.G.

First international meeting of young geographers. Geog. v shkole
20 no.6:1-8 N-D '57. (MIRA 10:12)
(Youth--Congresses)   (Geography--Study and teaching)

BASHENINA, N.V.; LEONT'YEV, O.K.; SIMONOV, Yu.G.; VYSKREBENTSEVA, V.S.
VOSKRESENSKIY, S.S.; PIOTROVSKIY, M.V.

Genetic classification of the relief and the principles of making large-scale geomorphological maps. Izv. AN SSSR.Ser.geog. no.1:115-120 Ja-F '58.
(MIRA 11:2)

1.Geograficheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(Physical geography) (Maps)

BASHENINA, N.V.; LEONT'YEV, O.K.; SIMONOV, Yu.G.; VYSKREBENTSEVA, V.S.;
ZARUTSKAYA, I.P.

Classification of land forms and legend for large-scale
geomorphological maps. Sov.geol. 1 no.11:54-75 N '58.
(MIRA 12:4)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Physical geography--Maps)

VOSKRESENSKIY, S.S.; ZORIN, L.V.; SIMONOV, Yu.G.

Laws of slope formation in Eastern Siberia. Vest.Mosk.un.Ser.5:
Geog. 15 no.1:49-56 '60.   (MIRA 13:8)

1. Kafedra geomorfologii Moskovskogo universiteta.
         (Siberia, Eastern--Geology, Structural)

SIMONOV, Yu.G.

December Plenum of the Central Committee of the CPSU and new geography tasks.   Vest. Mosk. un. Ser.5: Geog. 15 no.2:3-4 Mr-Ap. '60.(MIRA 13:9)
(Agricultural policy)   (Geography)

SIMONOV, Yu.G.

In anticipation of the 22d Congress of the CPSU. Vest. Mosk.un.
Ser. 5: Geog. 16 no.5:3-4 S-O '61.   (MIRA 14:9)
                        (Geographical research)

VOSKRESENSKIY, S.S.; SIMONOV, Yu.G.

Geomorphological analysis in prospecting for pebbles, sands, and clays in the Angara Valley. Vop.geog. no.52:45-55 '61.
(MIRA 14:6)

(Angara Valley—Rocks, Sedimentary)

BASHENINA, Nina Viktorovna; LEONT'YEV, Oleg Konstantinovich;
PIOTROVSKIY, Mikhail Vladimirovich; SIMONOV, Yuriy
Gavrilovich; VYSKREBENTSEVA, V.S.; ZARUTSKAYA, I.P.;
Prinimali uchastiye ZORIN, L.V.; ORLOV, I.V.; ZVONKOVA,
T.V.; FEDOROVICH, B.A.; SHATALOV , Ye.T., retsenzent;
GLAZOVSKAYA, M.A., retsenzent; ARISTARKHOVA, L.B., re-
tsenzent; YERMAKOV, M.S., tekhn. red.

[Methodological guide to geomorphological mapping and
the carrying out of geomorphological surveys at scales of
1:50 000 - 1:25 000 (with legend)]Metodicheskoe ruko-
vodstvo po geomorfologicheskomu kartirovaniiu i proizvod-
stvu geomorfologicheskoi s"emki v masshtabe 1:50 000 -
1:25 000 (s legendoi). Pod red.N.V.Basheninoi. Moskva,
Izd-vo Mosk.univ., 1962. 202 p. ___ [Legend; supplements
VIII-[XI]]Legenda geomorfologicheskoi karty Sovetskogo
Soiuza masshtaba 1:50 000 - 1:25 000; prilozhenie VIII-
[XI] 1960. 25 p.   (MIRA 15:7)
                  (Geomorphology—Maps)

SIMONOV, Yu.G.

Formation of troughs. Inform.sbor.o rab.Geog.fak.Mosk.gos.un.
po Mezhdunar.geofiz.godu no.9:40-47 '62. (MIRA 16:2)
(Geology, Structural)

BORSUK, O.A.; SIMONOV, Yu.G.

Paragenetic complexes of slopes and slope sediments in southeastern
Transbaikalia. Biul. MOIP. Otd.geol. 37 no.4:146-147 Jl-Ag '62.
(MIRA 16:5)
(Transbaikalia—Slopes (Physical geography))
(Transbaikalia—Sediments (Geology))

BYKOV, V.D., red.; ZVONKOVA, T.V., red.; GLADKOV, N.A., red.;
KOVALEV, S.A., red.; KOSOV, B.F., red.; MARKOV, K.K.,
red.; RYABCHIKOV, A.M., red.; SAUSHKIN, Yu.G., red.;
SIMONOV, Yu.G., red.; KHRUSHCHEV, A.T., red.;
BOKOVETSKIY, O.D., red.; KONOVALYUK, I.K., mladshiy red.;
GOLITSYN, A.V., red.kart; KOSHELEVA, S.M., tekhn. red.

[Soviet geography during the period of the building of
communism] Sovetskaia geografiia v period stroitel'stva
kommunizma. Moskva, Geografgiz, 1963. 486 p.
(MIRA 16:10)

(Geography)

Ivan Semenovich Shcharin's (?) anniversary. ... in ...

Ser. soed. N .2:136-137 My-Je '65.   (MIRA 18:6)

VOSKRESENSKIY, S.S.; POSTOLENKO, G.A.; SIMONOV, Yu.G.; PATYK-KARA, N.G.; ANAN'YEV, G.S.; PIMENOVA, R.Ye.; YEVTEYEVA, I.S.; KUZNETSOVA, L.T.; SOROKINA, Ye.P.; ZORIN, L.V.; SLADKOPEVTSEV, S.A.; ARISTARKHOVA, L.B.; MEDVEDEVA, N.K.; LOPATINA   L.I., red.

[Geomorphological studies; work experience in southeastern Transbaikalia, eastern Fergana, central Kazakhstan, and the Caspian Lowland] Geomorfologicheskie issledovaniia; opyt rabot v IUgo-Vostochnom Zabaikal'e, Vostochnoi Fergane, TSentral'nom Kazakhstane i Prikaspiiskoi nizmennosti. Moskva, Izd-vo Mosk. univ., 1965. 275 p.   (MIRA 18:7)

SIMONOV, Yu.G.

Valley swamps as a regional type of valleys in Transbaikalia and the Far East. Zap. Zabaik. otd. Geog. ob-va SSSR no. 24 : 50-57 ' 64. (MIRA 19+1)

88687

S/137/61/000/001/023/043
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1961, No. 1, p. 25, # 1E200

AUTHOR: Simonov, Yu.I.

TITLE: Selection of a Technology for Spot Resistance Welding of Aluminum Alloys

PERIODICAL: "Tr. Nauchno-tekhn. o-va sudostroit. prom-sti", 1959, No. 33, pp. 61 - 66

TEXT: The author studied the effect of rigidity conditions $\varphi = I_{weld} / t_{weld}$ amp/sec (I_{weld} and t_{weld} are the welding current and time respectively) in spot welding of Al alloys on the properties of the welded joint. It is shown that changes in φ considerably affect the structure of the spot and its mechanical prop-erties. For instance, in the Д16Т (D16T) alloy when φ changes from 8.10^5 to 0.5. 10^5 amp/sec the structure of the spot alters from an equiaxial throughout to a columnar one. In the heat-affected zone the height of the superheated metal area increases with decreasing φ. Independent of φ, the hardness in the cast zone and in the heat-affected zone decreases when approaching the center of the spot. Tensile and shearing strength of single-spot specimens, 1.5 and 2 mm thick, of

Card 1/2

88687
S/137/61/000/001/023/043
A006/A001

Selection of a Technology for Spot Resistance Welding of Aluminum Alloys

D16T and A\Ir6T (AMg6T) alloys, welded at φ changing from 8.10^5 to 0.5 . 10^5 amp/ sec, did practically not change. φ has a considerable effect on the contaminability of the electrodes. Thus, in welding with Ml grade Cu electrodes at a reduced t$_{weld}$. , the number of spots welded without cleaning the electrodes, sharply increases. The plated layer on the Al surface forms during welding under rigid conditions, inclusions in the cast nucleus, non-compact regions and sharp fissures, as a result of which the failure of the spot begins and proceeds along the cast nucleus and the base metal. The failure of the spot in the absence of a plated layer begins, as a rule, on the nucleus boundary in the junction plane of the parts. The strength of the weld can be increased by compressing the spot in cold or heated state. Compression of cold spots by 10-ton force and of spots heated to 150°C by 8-ton force, increase shearing strength by 20 - 28% and endurance strength under vibration load by 2 - 2.5 times.

A. P.

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

Card 2/2

S/125/63/000/001/007/012
A006/A106

AUTHORS: Simonov, Yu. I., Yermakov, N. N. (Khabarovsk)

TITLE: Electric slag welding of gear wheel blanks

PERIODICAL: Avtomaticheskaya svarka, no. 1, 1963, 75 - 79

TEXT: The authors investigate the application of electric slag welding for gear wheel blanks 300 - 800 mm in diameter, made of 40 X (40Kh) Ст. 5 (St. 5) and 45 grade steels. The gears were welded on a АДС -1000 (ADS-1000) automatic machine with a consumable tip, and plate and wire electrodes. The basic technical characteristics of the unit are: electrode wire diameter - 3 mm; number of electrodes 1; welding current up to 1000 amps; rated circuit voltage - 380 v; voltage on the electrode - 30 to 50 v; vertical displacement of the welding torch 10 m/h; thickness of welded material - 20 to 70 mm, the consumable tip is made of mangan-ous steel. С B -08 (Sv-08) filler wire, ОСЦ -45 (OSTs-45) and АН -8 (AN-8) flux are used. Blanks up to 1m high can be welded on the described machine. Welding conditions, optimum sections of the tip, and mechanical properties of the weld are given in tables. The following results are obtained. The metal of the weld,

Card 1/2

Electric slag welding of gear wheel blanks

S/125/63/000/001/007/012
A006/A106

the fusion zone and the heat affected zone of St.5,45 and 40Kh steels show high strength, yield point and toughness. The cross-sectional contraction of the weld metal in St.5, 45 and 40Kh steels exceeds that of the base metal. The hardness of the metal in the weld, the fusion zone, and the heat affected zone of the afore-mentioned steel grades varies slightly and corresponds to the hardness of the base metal. Burnishing tests of electric-slag welded gear wheels show that the operational capacities of base and built-up metal gears are practically equal. The replacement of forged and cast wheels by welded rolled metal gear wheels, assures high quality of the parts, facilitates labor conditions and reduces labor consuming operations. There are 4 tables and 3 figures.

SUBMITTED: May 8, 1962

Card 2/2

SIMONOV, Yu.

USSR/Electronics - Semiconductor Devices and Photocells

. -8

Abs Jour : Ref Z ur - Fizika, No 3, 1957, No 7173

Author   : Simonov, Yu.
Inst   .: Khar'kov, USSR
Title   : DC Transformer Employing Semiconductors.

Orig Pub : Radio, 1956, No 9, 45

Abstract : Description of a c nverter used to transform dc from 5 -- 30
           volts into 40 -- 160 volts with load currents of 5 -- 20 ma.
           The converter employs a 400 cycle oscillator comprising two
           PEN junction transitors, and the rectification is by means of
           a bridge comprising four DG-Ts24 diodes. The winding data on
           the transformers and chokes are given. The converter can
           withstand overloads and short circuits.

Card   : 1/1

SIMONOV, Yu. L.; VALITOV, R. A.,

"Frequency Stabilization of Transistorized Oscillators with the Aid of Ticon[trade name] and Varicond [barium titanate] Capacitors," Semiconductor Devices and Their USes; Collection of Articles, No. 2, p 383, Izd-vo, Mosocw, "Sovetskoye radio,'" 1957.

SOV-115-58-4-36/45

AUTHORS: Valitov, R.A.; Aleksandrov, A.I.; Simonov, Yu.L.

TITLE: Miniature Measuring Instruments Using Transistors (Malo-
              gabaritnyye izmeritel'nyye pribory na poluprovodnikakh)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 4, pp 84-88 (USSR)

ABSTRACT: Three pieces of measuring apparatus based on transistors
              and built by the authors in 1956-1957 are described. (1)
              A crystal heterodyne wavemeter consisting of a stepless
              waveband oscillator, crystal auto-oscillator, mixer and
              AF amplifier for the 125-250 kc and 2-4Mc bands. The
              set is powered by batteries and consumes 10ma at 30v. Its
              characteristics are similar to those of the VG-526. (2)
              A signal generator consisting of carrier-frequency oscilla-
              tor, power amplifier, crystal calibrator, audio-oscillator,
              carrier level and modulation factor indicator and voltage
              dividers. It can operate either on carrier frequency or
              with amplitude-modulated oscillation, and is used to

Card 1/2

SOV-115-58-4-36/45

Miniature Measuring Instruments Using Transistors

measure the sensitivity of receivers in a range of 100kc-30Mc (first harmonic) and up to 150Mc (with upper harmonics). An RF voltage of from 10μv-10mv can be obtained at the output. The apparatus is powered from a side-circuit at 27 ±3 v with a consumption of 1 w and its characteristics are similar to those of the GSS-6. (3) An RC audio-oscillator with stepless wavechange covering a waveband of 20-20,000 c and with an output of 0.15w at a load impedance of 600 ohm. It is powered from batteries and has a consumption of 0.36w. There are 3 circuit diagrams.

1. Measurement--Instrumentation   2. Transistors--Applications

Card 2/2

SOV/106-59-6-3/14

AUTHOR: Simonov, Yu.L.
TITLE: Neutralisation of Tuned Transistor Oscillators
            (Neytralizatsiya rezonansnykh usiliteley na
            poluprovodnikovykh triodakh)

PERIODICAL: Elektrosvyaz', 1959, Nr 6, pp 18-24 (USSR)

ABSTRACT: One of the fundamental disadvantages of transistors is
          the high degree of internal feedback due to the
          admittance Y_{12}. This internal feedback is generally
          neutralised by external neutralising four-terminal
          linear passive feedback circuits, which can be
          classified into four types: series (Z-neutralisation),
          parallel (Y-neutralisation), series-parallel
          (H-neutralisation), parallel-series (G-neutralisation),
          or combinations of these types. In this article an
          analysis is made of Y-neutralisation of single-circuit,
          tuned amplifiers having auto-transformer or transformer
          inter-stage coupling. Basic design formulae are
          derived. All the formulae refer to common-emitter
          circuits using the Y-parameters of the transistor.
          The equivalent circuit of a neutralised amplifier with
          auto-transformer inter-stage coupling is shown in Fig 1.
Card 1/3 It consists of three cascade-connected four-terminal

SOV/106-59-6-3/14

Neutralisation of Tuned Transistor Oscillators

networks (the transistor, the tuned-circuit KCR_K and the load, which is usually the input resistance R_H and the input capacity C_H of the following stage). The neutralising network N is connected in parallel as shown. The matrix of the amplifier is obtained by combining the a-matrices of the triode (Ref 5), of the tuned circuit (Ref 6), and of the load (Ref 7). Using the formula for transformation from a- to Y-matrices, the Y-matrix of the amplifier is found. This is combined with the Y-matrix of the neutralising network to obtain the Y-matrix of the neutralised amplifier (Eqs 1 to 4). In practice, the neutralising network consists of arrangements of R and C as shown in Fig 2. The matrices for these networks are given in Eqs 5 to 7. The total Y-matrix of the amplifier with neutralisation (Eq 8) is obtained by combining (1) and (5). From this matrix, the design formula for the neutralising circuit component values are obtained (Eqs 9 to 12). Finally, formulae for the input admittance, the output admittance and for the gain of the neutralised amplifier are derived. The equivalent

Card 2/3

SOV/106-59-6-3/14

Neutralisation of Tuned Transistor Oscillators

circuit for an amplifier with transformer inter-stage coupling is given in Fig 3. The circuit is analysed in a manner analogous to that for an auto-transformer circuit. The formulae obtained were checked experimentally and the difference between theoretical and practical results was not more than 12%. It was also established that Y-neutralisation has a number of advantages over H, G and Z-neutralisation (simpler neutralising networks and better values if R_{in}, R_{out} and gain), but under some practical operating conditions Y-neutralisation is not suitable since large changes in the feedback admittance through the neutralising circuit can lead to instability.

Card 3/3   There are 4 figures and 7 references, of which 1 is English, and 6 are Soviet or Soviet translations of foreign articles.

SUBMITTED: January 13, 1959

69174

S//106/59/000/11/005/013

9.2520

AUTHOR: Simonov, Yu. L.

TITLE: The Stability of Tuned "Single-Mesh" Amplifiers using Semiconductor Triodes

PERIODICAL: Elektrosvyaz', 1959, Nr 11, pp 34-39 (USSR)

ABSTRACT: One of the disadvantages of semi-conductor triodes compared with valves is the large internal feedback which causes parasitic oscillation, makes the tuning of the input and output stages mutually dependent, etc. The aim of this article is to analyze the factors on which the stability of semi-conductor tuned amplifiers depends and to find the maximum stable gain. The coefficient βK round the feedback loop is investigated and the Nyquist stability criterion applied to the results. The procedure is as follows:
1. A system of characteristic equations for the nodal voltages of the amplifier is first set up (Eq 1).
2. A complex form of expression for the transfer coefficient round the loop βK is determined –

Card 1/3

S/106/59/000/11/005/013

The Stability of Tuned "Single-Mesh" Amplifiers using Semiconductor
Triodes

$$\ddot{\beta K} = a + ib = 1 + \frac{\Delta}{\Delta^{\bullet}}$$

where Δ is the determinant of the characteristic
equations, $\Delta^{o} = \Delta$ when $Y_{21} = 0$ (Eq 7).

3. From the condition of phase balance $b = 0$, the fre-
quencies at which $I_m(\beta K) = 0$ are determined.

4. These frequency values are substituted in the expression
for $Re(\beta K)$ and, from the condition that $Re(\beta K) < 1$, the
condition for absolute gain stability is determined (Eq 22).
The method of analysis is applied to a common-emitter type
circuit, having n identical stages with resonant circuits
tuned to the same frequency w_o (Fig.1). The equivalent
π-form circuit is shown in Fig.2. The expression Eq (23)
for the gain K_o of such an amplifier without feedback was
developed by the author in a previous work (Re 4), and the
stability coefficient is given by K_o/K'_o where K'_o is
the gain with feedback. The maximum stable gain (Eq 28) is

Card 2/3

69174
S/106/59/000/11/005/013

The Stability of Tuned "Single-Mesh" Amplifiers using Semiconductor
Triodes

shown to depend only on the four triode parameters r_{12} ,
C_{12}, r_{21}, L_{21} and the frequency.   An example of calculation
of the limiting stable gain is given. There are 2 figures,
1 table and 5 references, all Soviet.

SUBMITTED: May 8, 1959.

Card 3/3

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S/142/60/003/002/016/022
E192/E382

AUTHORS: Simonov, Yu.L. and Shilov, V.I.

TITLE: Evaluation of the Condenser Capacitance in the
             Emitter Circuit of a Transistor in Tuned
             Amplifiers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
             Radiotekhnika, 1960, Vol. 3, No. 2, pp 287-289

TEXT: The temperature stability of a tuned transistor
amplifier can be increased by connecting a resistance R
in parallel with the capacitance   C in the emitter circuit
of the transistor (Fig. 1). The capacitance is usually
determined from:

$$c \geqslant \frac{5 \div 10}{2\pi f_H R} \tag{1}$$

where f_H is the nominal operating frequency of the device.
The experiments show, however, that if C is determined
from this formula, the amplifiers have a tendency to become
unstable. It is therefore necessary to investigate the effect
of RC on the stability of tuned amplifiers. For this purpose.
Card 1/3