

A simple method for ...

S/194/62/000/012/050/101
D271/D308

order to avoid these effects it is necessary to polish with carborundum the inner surface of the quartz tube, thus ensuring firm adhesion to the glass of the layer formed through evaporation.

[Abstracter's note: Complete translation.]

Card 2/2

RITTENBERG, V

Demonstration of dislocations in silicon monocrystals.

V. Rittenberg and I. Schiteanu. *Acad. rep. populare Romine, Studii cercetari met.* 5, 169-64(1960).—Si plates 8 mm. in diam. and 3 mm. thick, cut perpendicular to the axis of the monocrystal obtained by vacuum zone melting without a crucible, which had a medium resistivity of 0.3 ohm cm., were polished with carborundum 600 and then in a soln. of 48% HF 3, HNO₃ 5, glacial AcOH 3 parts, and Br 3 drops. Then they were corroded by the Dash corrodant: 48% HF 1, HNO₃ 3, glacial AcOH 12 parts. The small cavities observed indicate the places of dislocations. The results of these tests (detd. by measurement of the diam. and no. of the small cavities) indicate that the duration of the corrosion does not affect the no. of the dislocations revealed, that the corrosion velocity on the front of the crystal is of the order of 10% of the attack velocity in the direction of the dislocations, and that angles between the dislocation line and the normal to the crystal face were 75°.

M. Ben El-Mechaieq

mw

CZECHOSLOVAKIA / Chemical Technology. Chemical Products. H
Ceramics. Glass. Astringents. Concrete.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 68206.

Author : Ritter A,
Inst : Not given.
Title : Substitutes for Glazed Ceramic Tiles.

Orig Pub: Pozemni stavby, 1957, 5, No 1, 33-35.

Abstract: As substitutes for glazed ceramic tiles used in the finishing of bathroom walls, kitchens, and sanitary facilities, 3mm-thick opaque structural glass is used. It is attached to plaster with special adhesive paste. Glueing of the fancy relief or etched design glass to the painted plaster

Card 1/3

CZECHOSLOVAKIA / Chemical Technology. Chemical Products. H
Ceramics. Glass. Astringents. Concrete.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 68206.

Abstract: production of the pressed wood fibre squares with
lacquered or enameled surface has already been in-
stituted.

Card 3/3

H

43. Vibrations of machine tools, by A. Ritter, "Népszabadság Technika" - Hungarian Technics - No. 9, pp. 13-15, (Sept. 1949)

The detrimental effect of the vibrations presents itself in the deformation of the surface and shape of the workpiece. The component of the vibrations which act perpendicular on the working surface should be eliminated in order to stop its influence on the spacing between the tool and the workpiece. The vibrations are caused by the forces present in the gearings, by the tool itself and by some minor movements of the machine. In respect to gearings, the drive, the bearings and the unbalanced rotary masses must be examined as well as the vibrations produced by the belt drive. The vibrations originating on the tool itself may be divided into two groups, but only one can be eliminated through the correct setting of the tool.

The spreading of the vibration is not necessarily detrimental, however, where the results may be unfavorable their influence may be eliminated by insulation or damping the vibration. In general there are two methods of measuring vibrations: measurement of the frequency, or, simultaneously, the measurement of energy also, for the latter only electrical instruments are suitable.

KEDROV-ZIKHMAN, O.O.; RITTER, A.A.

Effect of free transpollination of winter rye varieties on
the change in some features of seeds. Biu. Inst. biol. AN
BSSR no.6:223-227 '61. (MIRA 15:3)
(RYE BREEDING)

KOTLYAROV, I.I., prof.; PLYUT, Ye.P., vira (Krasnoyarsk, ul. Diksona, d. 7, kv. 2); RITTER, A.Ya.; ROMANOVA, O.V. (Krasnoyarsk, 20, ul. Diksona, d. 7, kv. 2)

Treatment of radiation injuries of the skin with fresh autofibrin films. Vop. onk. 10 no.10:97-100 '64. (MIRA 18:5)

1. iz kafedry biokhimii (zav. - prof. I.I. Kotlyarov) Krasnoyarskogo medicinskogo instituta (rektor - dotsent P.G. Fedzholkov) i Krasnoyarskogo krayevogo onkologicheskogo dispansera (zav. radiologicheskim otdeleniyem - vrach Ye.P. Plyut) Adres Kotlyarova i Rittera: Krasnoyarsk, ul. Karla Marksa, 122, Kafedra biokhimii Krasnoyarskogo medicinskogo instituta.

RITTER, Endre

Certain questions of automation in the machine industry from the point of view of their realization in Hungary. Gepgyartastechn 1 no. 6:201-206 S '61.

1. General Machine Designing Office, Budapest, and Managing Chairman, Committee on Automation, Federation of Technical and Scientific Associations.

KAFFKA, Karoly; GYORGY, Zoltan; VAMOS, Tibor, dr.; RITTER, Endre; MARKUS, Ferenc; BORMISSZA, Gyula, dr.; BUJTAS, Laszlo, dr.; BUJTAS, Laszlo, dr.; EDELENYI, Laszlo; BAN, Tamas, dr.; TEGZE, Miklos, dr.; ALPAR, Imre; KERECSENYI, Gyorgy; GANGER, Gyorgy; VARGA, Istvan.

Present state and perspectives of the automation in the food industry. Elelm ipar 18 no.2:33-36 F'64

1. Committee on Measuring and Control Technique, Scientific Association of the Agricultural and Food Industry, Budapest (for Kaffka).
2. Directorate of Instrument Industry, Ministry of Metallurgy and Machine Industry, Budapest (for Gyorgy).
3. National Committee on Technical Development, Budapest (for Vamos).
4. Central Committee of Automation, Budapest (for Ritter).
5. Secretariat of Automation, Ministry of Metallurgy and Machine Industry, Budapest (for Markus).
6. Ministry of Food, Budapest (for Bojtas).
7. Technical Department, Ministry of Food, Budapest (for Alpar).

RITTER, Endre

Economical conditions of the operation of installed machines
in case of their supplementary automation. Meres automat 11
no.8/9:229-235 '63.

1. Altalanos Geptervezo Iroda; "Meres es Automatika" szerkeszto
bizottsagi tagja.

RITTER, Endre

Rationalization of measuring techniques in the machinery industry.
(To be contd.) Meres automat 8 no.7:194-202 '60.

1. Altalanos Geptervezo Iroda.

RITTER, Endre

Process diagrams for facilitating fault tracing in automatic controls. Muszaki kozl MTA 31 no.1/4:65-72 '62.

1. Altalanos Geptervezo Iroda.

RITTER, Endre

Reducing the friction of hydraulic regulating slide valves.
Meres automat 11 no.6:157-159 '63.

1. Altalanos Gепtervezo Iroda; "Meres es Automatika" szerkeszto
bizottsagi tagja.

RITTER, Endre

"A Budapesti Műszaki Egyetem Gépábratástechnológiai Tanszékének
Jubileumi Évkönyve, 1951-1961", edited by [Dr] Ferenc Lettner.
Reviewed by Endre Ritter. *Mérés automat* 11 no.4/5:153-154 '63.

1. "Mérés és Automatika" szerkesztő bizottsági tagja.

RITTER, Endre

Possibilities in the active dimension control. Meres automat
12 no. 2: 33-41 '64.

1. Aitalanos Geptervezo Iroda; "Meres es Automatika" szerkesz-
to bizottsagi tagja.

RITTER, Endre

"Automatic machinery" by Prof. G. A. Shaumian. Reviewed by E. Ritter.
Meres automat 9 no.11:347 '61.

1. Szerkeszto bizottsagi tag, "Meres es Automatika".

RITTER, Endre

An account of the lectures delivered in the 3.1. "Machine industry applications" section at the International Federation of Automatic Control congress. Meres automat 9 no.4:103-105 '61.

1. Osztyalyvezeto, Altalanos Geptervezo Iroda, es "Meres es Automatika" szerkeszto bizottsagi tagja.

RITTER, Eugenia

Appearance of intestinal parasites in pre-school children in the Bydgoszcz province. Wiadomosci parazyt., Warsz. 4 no.5-6:503-504; Engl. transl. 504-505 1958.

1. Z Wojewodzkiej Stacji Sanitarno-Epidemiologicznej w Bydgoszczy.
(HELMINTH INFECTIONS, epidemiology,
in pre-school child in Poland (Pol))

RITTER, E.

Social tasks in automation of machine production. p. 85.

MERES ES AUTOMATIKA. (Merestechikai es Automatizalasi Tudomanyos
Egyesulet) Budapest, Hungary, Vol. 7, no. 4/5, 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,
August 1959.
Uncls.

RITTER, Eugenia

Development of the treatment of parasitic diseases of the digestive system in Bydgoszcz according to statistical data on the period of 1954-1961 with special reference to lambliasis. Wiadomosci parazyt. 8 no.4:481-484 '62.

1. Wojewodzka Stacja Sanitarno-Epidemiologiczna, Bydgoszcz.
(GIARDIASIS statist)

RITTER, Eugenia

Evaluation of methods of coprological examination for eggs and cysts of Protozoa. Wiadomosci parazyt., Warsz. 4 no.5-6:493-494; Engl. transl. 494-495 1958.

1. Z Woj. Stacji San.-Epid. w Bydgoszczy.

(PROTOZOA,

eggs & cysts in feces, exam. technic (Pol))

PITTER, E.

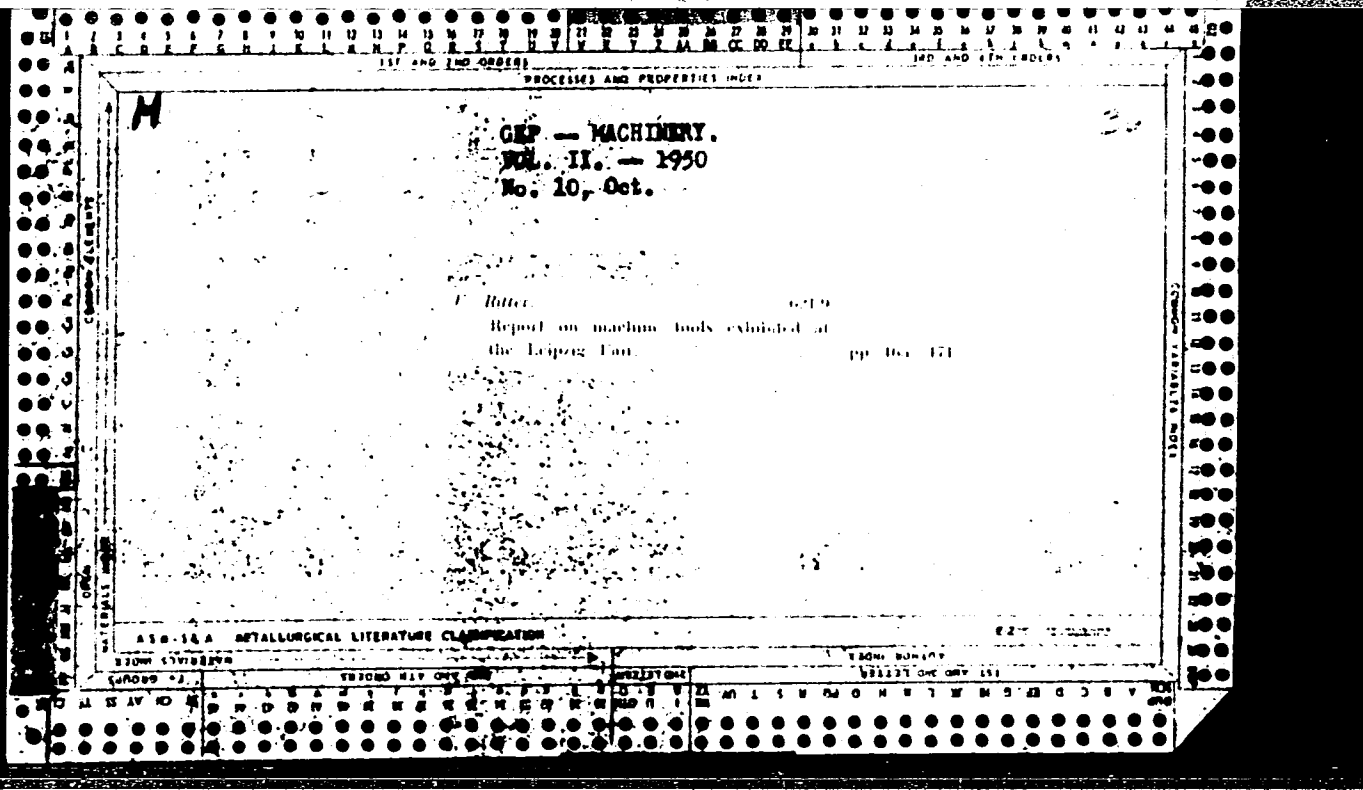
"Machine tools for automatic copying" p. 301, (GEP, Vol. 5, no. 7, July, 1953,
Budapest, Hungary)

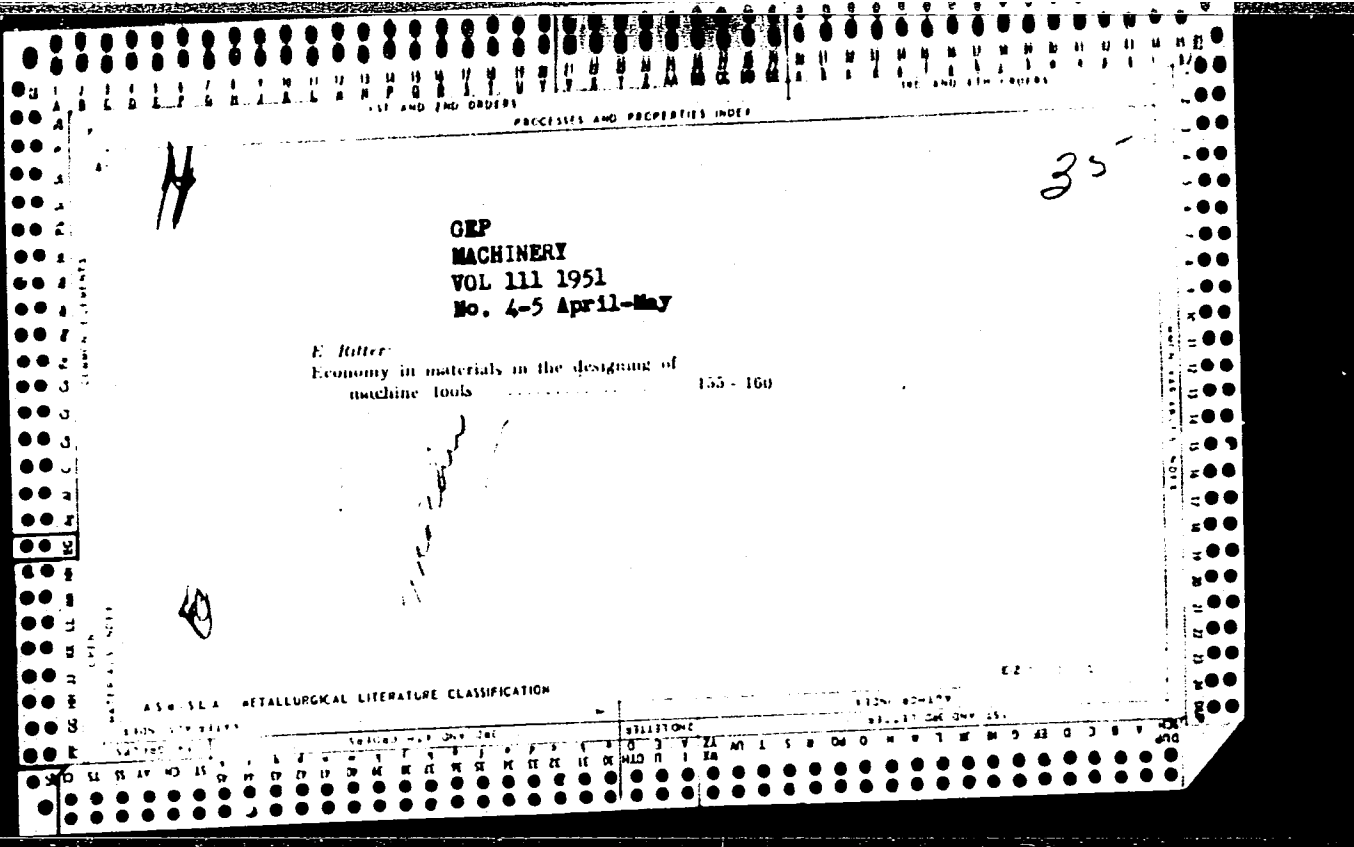
SO: Monthly List of East European Accessions, L.C., Vol. 2, No. 11, Nov. 1953, Uncl.

RITTER, E.

"Problems of Machine-tool Vibrations and their Economic Importance." p. 543.
(Gep. Vol. 5, no. 12, Dec. 1953. Budapest.)

SO: Monthly List of East European Accessions. / Vol. 3, no. 6 Library of Congress, June 1954, Uncl.

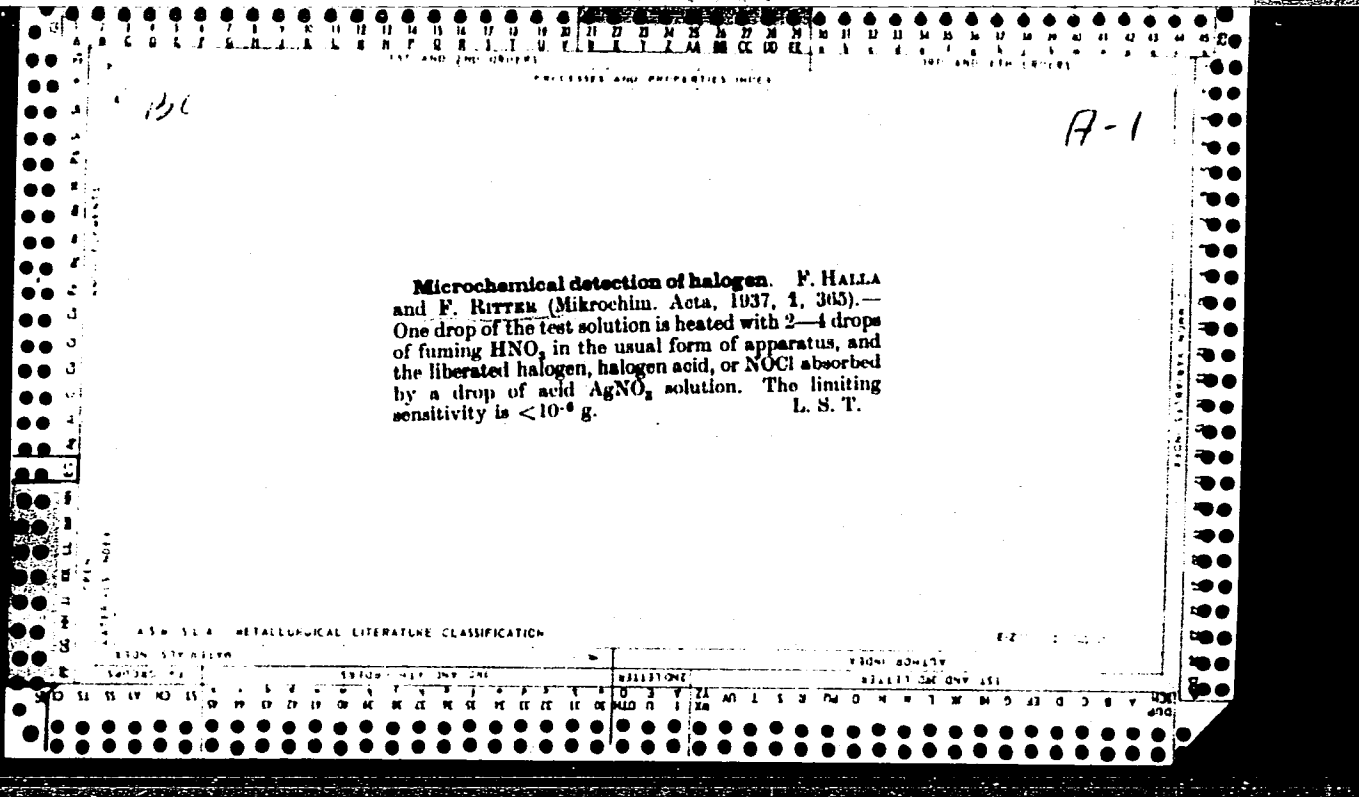




RITTER, E. G. (Engineer)

E. G. Ritter, of the Gor'kiy Automobile Factory im. V.M. Molotov, wrote an article entitled "Automatization of Technical Processes in the Gor'kiy Automobile Factory im. Molotov", pages 137-160 on the book entitled AUTOMATIZATION OF TECHNOLOGICAL PROCESSES (Avtomatizatsiya tekhnologicheskikh protsessov) by ALL-UNION MECHANICAL ENGINEERS SCIENTIFIC AND TECHNICAL SOCIETY MOSCOW SECTION (Vsesoyuznoe nauchnoe inzhenerno-tekhnicheskoe obshchestvo mashinostroiteley. Moskovskoe Otdeleniye.)

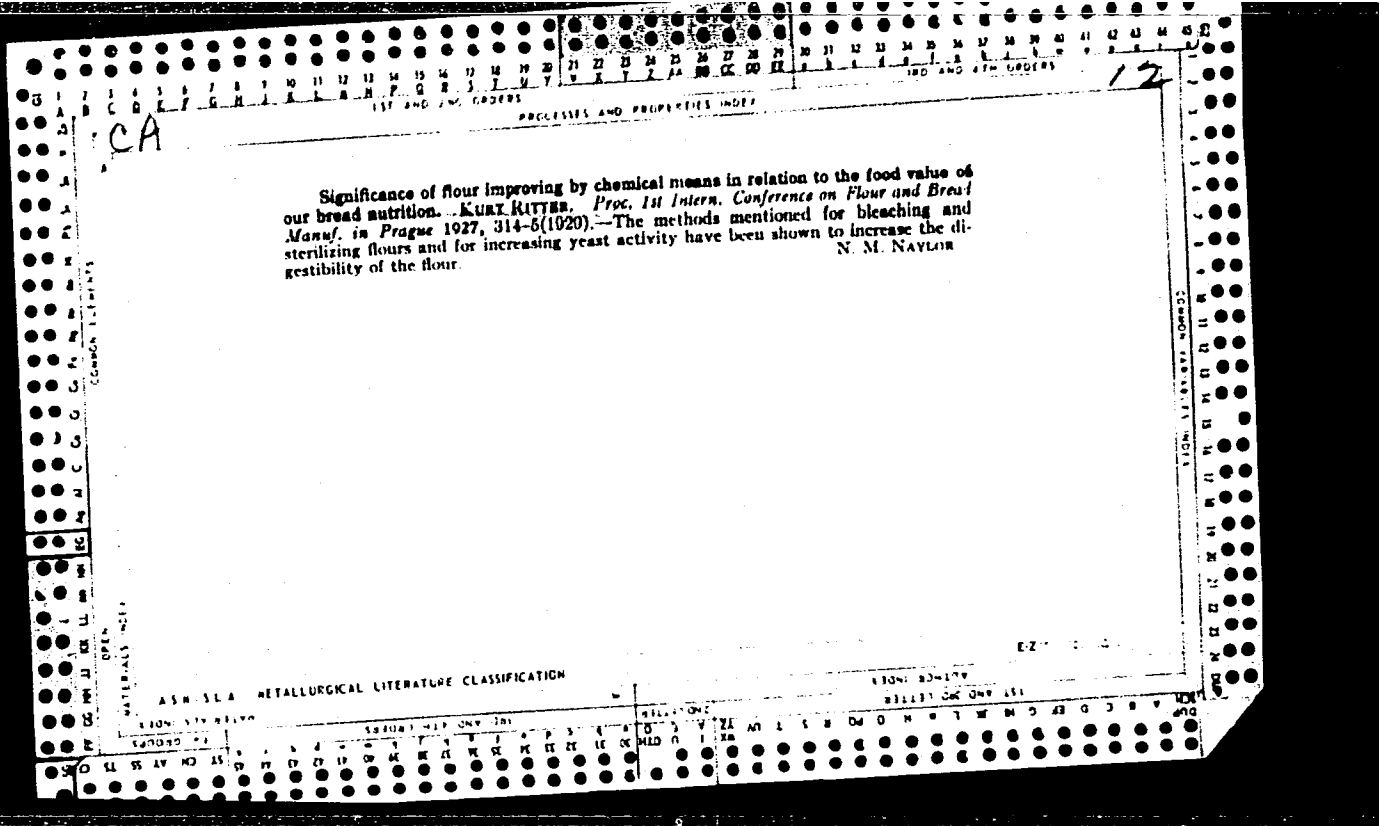
SO: A.I.D., Library of Congress (Call No.: TA165.V8)



CA

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Ritter, Franz. Korrosionstabellen metallischer Werkstoffe. 3. Aufl. Wien: Springer Verlag, 1952. 283 pp.



Q I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NM NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YY YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ

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Flour improving by chemical means. KURY RYTMA. *Proc. 1st Intern. Conference on Flour and Bread Manuf. in Prague 1927*, 173-4(1929).—Flour bleaching and sterilization by means of N oxides are recommended. Millers must blend wheats to improve the qualities of "weak flours." There are certain patented prepn. which increase the swelling capacity of gluten and stimulate yeast action. These may be used to improve flour milled from poor grades of wheat. They are also helpful in obtaining a satisfactory rye flour.

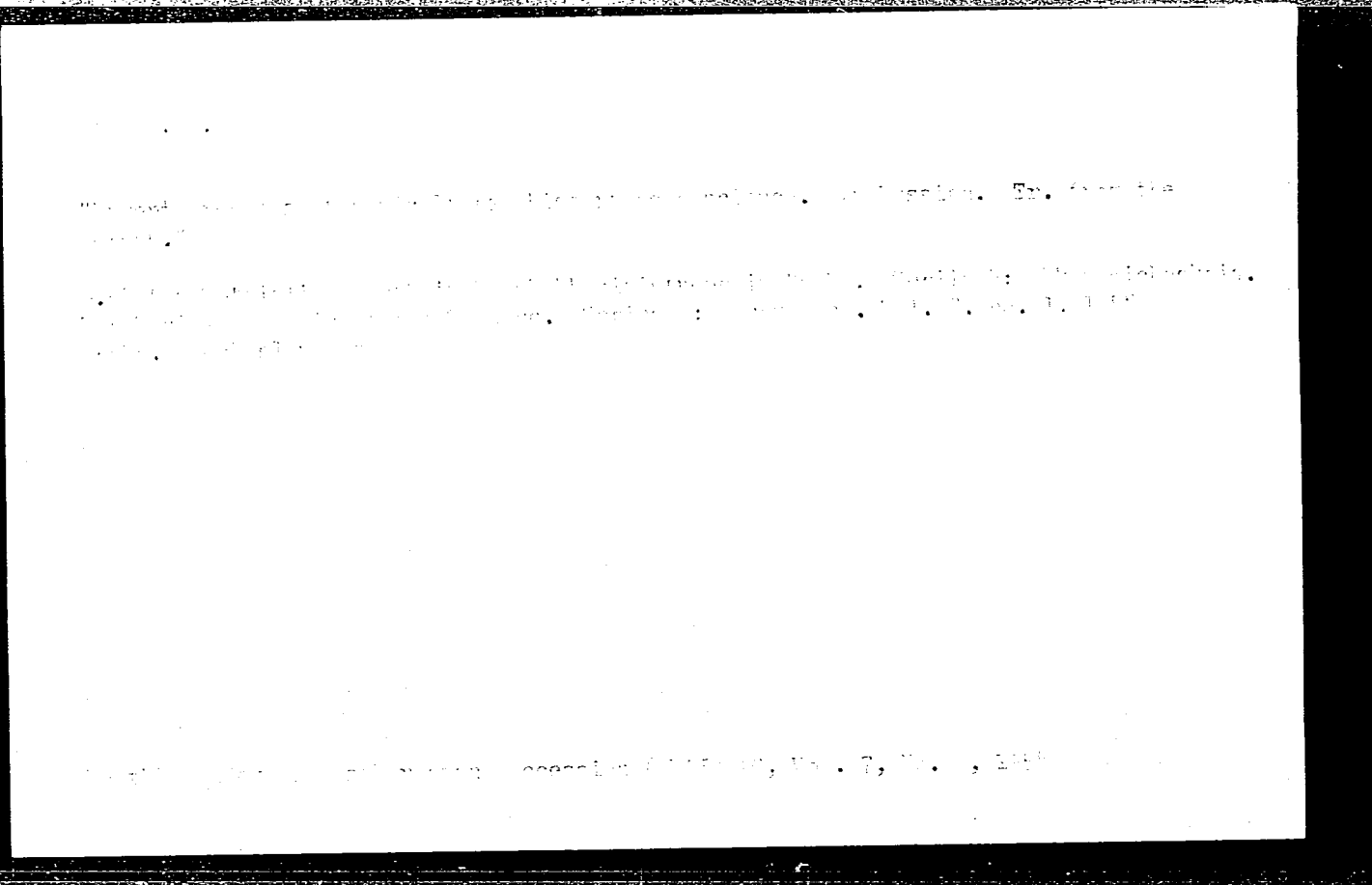
N. M. NAYLOR

ASME 31 A METALLURGICAL LITERATURE CLASSIFICATION

RITTER, J.

Clinical and bacteriological diagnosis of dysentery from specimen
material at Laxlo Hospital. Orv. hetil. 94 no. 34:949-951 23 Aug 1953.
(CIML 25:1)

1. Doctor. 2. Second Children's Department (Head Physician -- Dr. Jozsef
Csapo), Laszlo Metropolitan Hospital (Director -- Dr. Pal Ferencz),
Budapest.



RITTER, K.K.; KHILOV, Yu.D., starshiy nauchnyy sotrudnik

Practices in introducing the remote patrol method for floating timber on the Oya River, Angara-Yenisey basin. Trudy VSNIPILesdrev no.5: 3-10 '62. (MIRA 16:5)

1. Nachal'nik laboratorii lesosplava Vostochno-Sibirskogo nauchno-issledovatel'skogo i proyektного instituta lesnoy i derevoobrabatyvayushchey promyshlennosti (for Ritter). 2. Laboratoriya lesosplava Vostochno-Sibirskogo nauchno-issledovatel'skogo i proyektного instituta lesnoy i derevoobrabatyvayushchey promyshlennosti (for Khilov).
(Oya River--Lumber--Transportation)

PURJESZ, I.; RITTER, L.; URBAN, G.; WEISZ, P.

Hyposmosis and aldosterone secretion. Acta physiol. hung. 17
no. 4: 443-448 '60.

1. Institute of Pathophysiology, Medical University, Budapest.
(OSMOSIS)
(ALDOSTERONE physiology)

KADAS, T.; WEISZ, P.; GLAZ, E.; KOVES, P.; RITTER, L.

The effect of spinal cord transection on the corticosterone secretion and histologic pattern of the adrenal cortex.
Acta physiol.hung. 16 no.4:285-289 '59.

1. Institute of Pathophysiology and 3rd Department of Medicine,
Medical University, Budapest.
(SPINAL CORD surgery)
(ADRENAL CORTEX)

RITTER, L.G.; UDINTSEVA, V.S.; MIROLYUBOVA, L.L.

Production of sulfur by the reduction of sulfur dioxide
with coke in a fluidized bed. Khim.prom. no.11:844-848
N '62. (MIRA 16:2)

1. Ural'skiy nauchno-issledovatel'skiy khimicheskiy
institut.

(Sulfur)

(Fluidization)

(Sulfur dioxide)

HUNGARY

RITTER, Laszlo, Dr, BUCSINA, Oliver, Dr; National Institute of Traumatology
(director: SZANTO, Gyorgy, Dr, professor) (Orszagos Traumatologiai Intezet).

"The Treatment of Gluteal and Pelvic Injuries Causing Severe Hemorrhages."

Budapest, Magyar Traumatologia, Orthopaedia es Helyreallito Sebeszet, Vol IX,
No 2, 1966, pages 118-121.

Abstract: [Authors' English summary modified] The problems of the treatment of injuries of the gluteal region or of complex pelvic injuries accompanied by severe hemorrhage are discussed. A personal case is presented in which hemorrhage leading to severe shock developed secondary to a gluteal stab wound; it was successfully controlled by ligation of the ipsilateral hypogastric artery. The regional anatomical conditions, surgical techniques and modes of the development of collateral circulation are discussed. Based on literature data and personal experiences related to the treatment of gluteal and pelvic injuries with severe hemorrhage, the intervention described in the article is recommended. 3 Eastern European, 4 Western references.

WEISZ, Pal, Dr.; HORVATH, Laszlo, Dr.; KADAS, Tamas, Dr.; KOVES, Peter; RITTER, Laszlo

Hormone secretion of animals after excision of the adrenal medulla and during the regeneration of the adrenal cortical matter. Orv. hetil. 99 no.44:1538-1539 2 Nov 58.

1. A Budapesti Orvostudományi Egyetem Korelettani Intézetének (igazgató: Sos József dr. egyet. tanár) közleménye.

(ADRENAL MEDULLA, eff. of excis.

secretion of cortical hormones in rats after excis. of medulla & during regen. of cortical matter (Hun))

(ADRENAL CORTEX, physiol.

secretion in rats after excis. of medulla & during regen. of cortical matter (Hun))

RITTER, L-G
 CT

1ST AND 2ND ORDERS PROCESSES AND PROPERTIES INDEX 3RD AND 4TH ORDERS

CONTACT PROCESS FOR GASES OF A HIGH SO₂ CONCENTRATION IN H₂SO₄ PLANTS. G. K. BORESKOV AND L. G. RITTER. *Khim. Prom.* 1944, No. 5, 13-18; cf. *C. A.* 38, 5049. — The optimum concn. of SO₂ to insure a max. efficiency of the contact app. is 6.7% for pyrites and 8.3% for S. This is the case, provided the capacity of the turbo-compressors does not limit the vol. of treated gas. When the capacity of the compressors has reached its limit, the only way to increase the efficiency is to raise the SO₂ above its optimum while the degree of contact is reduced. For pyrites, an increase in the SO₂ concn. from 7 to 8% raises the output by 10-12%, while reducing the degree of contact 2-3%. An increase in the concn. of SO₂ from 7 to 9% raises the output by 18-20%, while reducing the degree of contact by 6.5-7.5%. For S, an increase in the SO₂ concn. from 7 to 9% raises the output by 25-27% and increasing the SO₂ concn. from 7 to 11% raises the output by 44-47%, while reducing the degree of contact in the first case by 2-3 and in the 2nd by 7-8%. Plant expts. were carried out with a 8.5% gas in an app. having internal heat exchange. The temp. of the first contact layer was regulated easily. As compared to a 7% gas, the degree of contact was lowered by 2% and the efficiency rose by 18%. M. HOSCH

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COMMON ELEMENTS

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS 3RD AND 4TH ORDERS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

18

RITTER, L. G.

Utilization of carbonaceous pyrite for the production of H_2SO_4 . G. K. Borekuy and L. O. Ritter. *Khimicheskiy Prom.* 1944, No. 2-3, 23-4. — Experience has shown that the use of carbonaceous pyrite in the manuf. of H_2SO_4 does not poison the catalyst. It does retard the reaction by reason of a diminution of the O content in the combustion gases. Up to 10% of C, the initial SO_2 concn. of the gases can be kept at 7%. The drop in yield in this case does not exceed 9%. The increased cost of production is compensated by the lower cost of the raw material. When the C content exceeds 10%, the initial SO_2 concn. must be lowered and the drop in production is too high. M. Hosh

COMMON ELEMENTS

OPEN

MATERIAL INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Ritter, L. G.

4000

✓ Sulfur trioxide production with oxygen by the contact method. G. K. Borekov, L. G. Ritter, and M. T. Serebrennikova. *Khim. Prom.* 1947, No. 1, 8-12. — A thermographic method of control of the SO₂ oxidation reaction rate was developed, based on recording the temp. rise in a catalyst layer by using a differential thermocouple. The "ignition temp." of the SO₂ + O mixt. (the lowest temp. of sustained reaction) is lower in O than in air. The relation between the component concn. and the reaction velocity is expressed by the kinetic equation of Borekov and Slin'ko (C.A. 38, 8135⁴). The app. design and its use are described. Bench-scale app. for H₂SO₄ production with V₂O₅ catalyst is described, and the results obtained with it were confirmed by semicom. operations. Catalyst superheating is prevented by an intermediate O introduction. Tests have shown that gaseous mixts. of varying concns. can be used by this method without unduly raising the V₂O₅ temp. above a permissible max. The use of O increases the app. capacity 5-8 times. Liquid SO₂ can be produced directly in the contact installation, also high concn. fuming H₂SO₄, sulfinic acids, Cl deriva. of SO₂, and other concd. products.

Chem 3

W. M. Sternberg

PM

LFH

Ritter, L.G.
BERESKOV, G.K., doktor khimicheskikh nauk; RITTER, L.G., kandidat tekhnicheskikh nauk; ~~SEREBRENNIKOVA~~, M.T., nauchnyy sotrudnik

Oxygen contact process for the manufacture of sulfuric anhydride
(sulfur trioxide) Khim.prom.no.1:8-12 Ja'47. (MLRA 8:12)

1. Nauchnyy institut po udobreniyam i insektofungisidam
(Sulfur trioxide)

BI- 8 acids, alkalis, salts.

But also. RITTER, L.G.

Temperature of vanadium catalysts for sulphuric acid manufacture.
G. K. Borekov, L. G. Ritter, and E. I. Volkova (*J. appl. Chem., U.S.S.R., 1949, 22, 230-240*).—The industrial value of catalysts for exothermic reactions is determined partly by the min. temp. of the incoming gas necessary for rapid attainment of optimum conditions. In experiments with V_2O_5 catalysts for H_2SO_4 manufacture from SO_2 and O_2 mixtures this temp. was chosen as that at which the catalytic reaction produced a 10° rise in the temp. of the catalyst. With constant O_2 content the heating temp. scarcely changed with variations in the SO_2 content, but with increase of O_2 content the temp. fell. Experimental values of the change of temp. with gas composition agreed with values calculated theoretically. The catalytic oxidation of SO_2 takes place entirely on the surface of the catalyst. S. G. SMITH.

Inst. Catalysis, Sci. Res. Inst. Fertilizers & Insecto-pesticides im. Ya. V. Savoylov

RITTER, Odon

Some points on applying the third brake. Jarmu mezo gep 11
no.10:361-363 0 '64.

1. Institute of Vehicle Development, Budapest.

SECRET
U. S. AIR FORCE, SERVICEMEN, 1950-56, 1958

RITTER, S.S.

Struempell familial spastic paraparesis. Zhur. nevr. i psikh. 59 no.5:
525-526 '59. (MIRA 12:7)

1. Nevrologicheskoye otdeleniye (zav. M.S. Bulavintseva) 1-y Gorodskoy
bol'nitsy, Groznyy.
(PARAPLEGIA, case reports,
hered. spastic (Rus))

RITTER, Vladislav, inz.

Effective help to power engineering. Normalizace 11 no.5:
150-151 My '63.

1. Podnikova normalizace, Zavody V.I. Lenina Plzen.

CA

11C

The absorption of vitamin B₁₂ by some bacteria important in the dairy industry. W. Ritter. *Landw. Jahrb. Schweiz.* 61, 1-5(1947); *Chem. Zentr.* (Russian Zone Ed.) 1948, II, 258.—A study was made to det. whether a lack of aneurine was responsible for the insufficient growth of organisms important in the dairy industry. The usual nutrient media consisting of pure glucose, very pure asparagine (source of N), K phosphate, MgSO₄, and the necessary mineral salts, were not satisfactory for the testing of these microorganisms. It was necessary to add a no. of amino acids, purine bases, choline, etc., to the nutrient soln. The vitamin

and growth substances to be tested were added to these media. The aneurine content was detd. by the *Phycomyces* method. *Lactobacillus helveticus* and *Streptococcus faecalis* utilized about 1/10 of the aneurine present; *Lactobacillus lactis* utilized about 1/10. Since the nutrient substrate, therefore, would provide sufficient aneurine for these organisms, it is highly improbable that a lack of this vitamin was responsible for the scant growth.

M. G. Moore

FABRIKOV, V.A.; RITTER, Ye.G.

Nonlinear gyromagnetic properties of ferrites subjected to low-power
superhigh frequency. Izv. AN SSSR. Ser. fiz. 23 no.3:380-387 Mr '59.
(MIRA 12:5)

(Ferrates)

24(3)

AUTHORS:

Fabrikov, V. A., Ritter, Ye. G.

SOV/48-23-3-19/34

TITLE:

Non-linear Gyromagnetic Properties of Ferrites on Low Levels of Superhigh Frequency Capacity (Nelineynnye giromagnitnyye svoystva ferritov na nizkikh urovnyakh sverkhvysokochastotnoy moshchnosti)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 3, pp 380-387 (USSR)

ABSTRACT:

The present paper investigates the problem of the shift of oscillations with different frequency in the gyromagnetic medium and gives some experimental data of the non-linear properties of ferrites on low levels of superhigh frequency capacity. The equation of motion of the gyromagnetic moment in the constant magnetic field $H_0 \vec{k}$ and in the alternating field of spontaneous polarization $\vec{h} = \vec{h}_{10} e^{i\omega_1 t} + \vec{h}_{20} e^{i\omega_2 t}$ was solved in this case in second approximation according to small variables (see enclosure). The possibility of isolating two adjacent frequencies by the envelope of combined signal was experimentally investigated by means of a device, the schematic drawing of which shows figure 1. Measurements were made

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Non-linear Gyromagnetic Properties of Ferrites on Low Levels of Superhigh Frequency Capacity SOV/48-23-3-19/34

at a wave length of 3 cm on polycrystalline Ni-Zn-ferrite with a saturation magnetization of $M_0 = 256,000 \text{ A m}^{-1}$. The half-width of the resonance curve of the material amounted to $24,000 \text{ A m}^{-1}$, which corresponds to a duration of transverse relaxation of $T = 1.9 \cdot 10^{-10}$ sec. In the magnetization of the ferrite nucleus during the detuning of the frequencies of two klystrons for 30 megacycles an envelope of modulated oscillations appeared on the screen of the oscilloscope. The optimum values of the magnetizing field, which were similar to the resonance values ($H_0 \sim 24,000 \text{ A m}^{-1}$), were experimentally chosen. The signal was visible on the screen of the oscilloscope at various functions of the capacities P_1 and P_2 possible under experimental conditions. They corresponded to the inequality $(P_1 P_2)_{\text{exp}} \geq 5 \cdot 10^{-8} W^2$, the amount of the signal being proportional to the capacity of two sources P_1 and P_2

Card 2/3

Non-linear Gyromagnetic Properties of Ferrites on Low SOV/46-23-3-19/34
Levels of Superhigh Frequency Capacity

(Fig 2). The authors thank A. L. Mikaelyan for his assistance.
There are 2 figures and 10 references, 2 of which are Soviet.

Card 3/3

36284-65 EEO-2/FSF(h. EW. O(t)/EED- Pm-4/Pn-4/Pac-4/Pi-4/Pj-4/
PK-4/Pl-4 WR

ACCESSION NR: AP5008166

S/0286/65/000/005/0041/0041

AUTHORS: Ritter, Ye. G.; Naumov, S. M.

53
B

TITLE: A method of obtaining Doppler frequency shifting in the optical wave band. Class 21, No. 168764

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 41

TOPIC TAGS: Doppler effect, frequency shift

ABSTRACT: This Author Certificate presents a method of obtaining Doppler frequency shifting in the optical wave band. To reduce the angular and spatial displacement of the frequency shifted beam and to obtain a smoothly transposed Doppler frequency while maintaining a constant amplitude of the Doppler signal the forward motion of the reflecting mirror surface is accomplished by a stationary mirror and a total internal reflecting prism rotated on a disk.

ASSOCIATION: none

SUBMITTED: 04Feb64

ENCL: 00

SUB CODE: OP

NO REF SOV: ,000
Card 1/1 JO

OTHER: 000

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

M

2

***Influence of the Mixture on the Mechanical Properties of Commercial Rolled 63 : 37 Brass.** O. RYÁČEK (*Mesinářská Sjezd Slevárenský, Praha (Internat. Foundry Congress, Prague), 1961, 363-370 [in Czech]; 371-373 [in French].*)— Addition of brass scrap or of 0-1% phosphorus to new brass melts made from electrolytic zinc and copper increases the tensile strength, but reduces the elongation and Erichsen value of rolled sheet. Phosphorus retards the annealing process and increases the brittleness on hot-rolling, but renders the metal less sensitive to overheating. Pure 63 : 37 brass tends to become very coarse-grained on annealing, but this may be prevented by small additions of phosphorus. Arsenic is a particularly deleterious impurity, since it reduces markedly the capacity of the metal to be hot-rolled.— A. R. P.

COMMON VARIABLES INDEX

AS B 31 A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

1ST AND 2ND ORDERS

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44

RITTICH, O.

Annealing sheets and strips of aluminum and aluminum alloys'. p. 100.
(Hutník, Vol. 7, No. 3, Mar 1957. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) IC, Vol. 6, No. 8, Aug 1957. Uncl.

WILICH, G.

"Modern measuring methods."

p. 9. (Luznik, Vol. 3, No. 3, March 1958, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) 10, Vol. 1, No. 3, September 1952.

RITTICH, OTAKAR

18
18
3
10409* (Czech.) Annealing Plates and Strips of Aluminum and Aluminum Alloys. Zřehant plechů a pásů z hliníku a jeho slitin. Otakar Rittich. *Hutník*, v. 7, Mar. 1957, p. 100-102.
A study of the best conditions for annealing aluminum and its alloys.

RG

uj

RITICH, O.

Molds for semifluid casting of aluminum and light metal alloys. p.50.
HUTNIK, Prague, Vol. 6, no. 2, Feb, 1956.

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

Rittich, O.

1197* Chills for the Semicontiguous Casting of Aluminum
and Alloys of Light Metals. Kokily pro poloplynulé liti
hlivku a slitu lehkých kovů. (Czech.) Otakar Rittich. 1
Hutník, v. 6, no. 2, Feb. 1936, p. 50-52.
Design of chills and factors affecting the service life of the
chill mold.

of

RITTIKH, P. A.

A comparative distribution of the wind in the lower strata of the atmosphere up to 1000 meters above a convex (Ontolovo) and concave (Slutsk) surface Slutsk, 1924.
xx p.

1. Winds.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

At. wt. of potassium from sunflower seed hulls.
 A. V. Ryzhenkov and M. K. Koryunov (J. Gen. Chem., Russ., 1959, 30, 22-24). The content of K from sunflower seed hulls was determined and compared with 30.04% for a standard. These results, together with those of other investigators, show that K does not accumulate in this material.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

GROUPS

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

COMMON VARIABLES INDEX

RITUS, A.I.; MANENKOV, A.A.

Splitting of the paramagnetic resonance lines of Cr^{3+} ions in ruby in an external electric field. Fiz. tver. t. 1: 5 no. 12: 3590-3593 D '63. (MIRA 17:2)

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

RITUS, Ivan Gerasimovich, 1893-

Plant cultivation; textbook Moskva, Gos. izd-vo sel'-khoz. lit-ry, 1952. 470 p. maps.
(Uchebniki i uchebnye posobiia dlia vysshikh sel'skokhoziaistvennykh uchebnykh zavedenii)
(54-23752)

SB187.R8R5

RITUS, I. G.

RT-1557 (Plant Industry) Pages 40-41 and 117-118 of:
RASTENIEVDSTVO. Moscow, 1952. 470 pages

RITTS, I.

Rastenlevodstvo (Plant Cultivation)

465 p. 2.00

SO: Four Continent Book List, April 1954

RITUS, T. N.

Ritus, T. N. "On measures to combat seed pests of umbelliferous fruit crops",
Boklady (Mosk. s.-kh. akad. im. Tshiryacova), Issue 8, 1948, (In index: 1949),
p. 151-53.

SO: U-411, 17 July 53, (D-topis' Zhurnal Lening Statey, No. 20, 1949).

Ritus, V.I.

U S S R .

539.18
3137. Production of π -mesons by photons and nucleon isobars. V. I. Ritus. *Zh. eksper. teor. Fiz.*, 27, No. 6 (12) 660-76 (1954) In Russian. 62

A nucleon isobar state of both ordinary and isotopic spin equal to $3/2$ is introduced phenomenologically and can participate as an intermediate state in the process. Two coupling constants describing transitions to the isobar and back again with absorption or emission of a photon are fitted from experiment. The remaining constant is chosen from the scattering of mesons by nucleons. The calculation is carried through to lowest order with damping in a charge independent theory. The results fit well the dependence on energy and angle for the cross-sections $\gamma + p \rightarrow \pi^+ + p$ and $\gamma + p \rightarrow \pi^+ + n$. O. E. BROWN

Ritus, V.I.

B-6

Category : USSR/Theoretical Physics - Quantum Field Theory

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 203

Author : Ritus, V.I.

Inst : Physics Institute, USSR Academy of Sciences

Title : On the Renormalization in the Equations of the New Tamm-Dancoff Method.

Orig Pub : Zh.eksprim. i teor. fiziki; 1956, 30, No 5, 965-967

Abstract : In the solution of the integral equation of Tamm-Dancoff for the scattering of a meson by a nucleon; singularities of the apex and of the proper-energy type occur, caused by the same portion of the kernel of the integral equation, which is related to the state $j = T = 1/2$. It is shown that these singularities can be eliminated by a finite renormalization of the charge.

Card : 1/1

RITUS, V.I.

Scattering of photons by nucleons and nucleon isobars. Zhur. eksp.
i teor.fiz. 30 no.6:1070-1078 Je '56. (MLRA 9:10)
(Photons--Scattering) (Nucleons)

Rit. U.S., Y. I.

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4156
THE SCATTERING OF PHOTONS BY NUCLEONS AND NUCLEAR ISOBARS. V. I. Ritus. Soviet Phys. JETP 3, 826-34 (1957) Jan.

The scattering cross section for photons against nucleons is computed, taking into account absorption and the excited states of the nucleons (isobars). The excited states of the nucleons are described by a relativistic equation for particles of spin and isotopic spin $\frac{3}{2}$. The coupling constants were obtained by comparison of experiments on the scattering and photoproduction of mesons on protons. Comparison of the results of this calculation with experimental data on the scattering of photons by protons would provide an additional check on the admissibility of the isobaric representation and on the correctness of the values chosen for the constants. (auth)

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1

AUTHOR: RITUS, V.I. 56-3-3456
TITLE: Angular Operators for Nuclear Reactions.
(Uglovyye operatory yadernykh reaktsiy-Russian)
PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 6, pp 1536-1546
(U.S.S.R.)

ABSTRACT: The author here investigates an orthogonal and a normed system of invariant angular operators. Here matrices are concerned according to which the scattering amplitude can be disintegrated. The author here determines a reaction of the type $a + b \rightarrow a' + b'$; in the center of mass system; here the particle a with the spin s impinges upon the particle b with the spin σ' in the direction \vec{k} . Hereby the particle a' with the spin S' (which flies off in the direction \vec{k}') and the particle b with the spin σ' is formed. Such a reaction is easily analyzed with the scattering matrix $S(\vec{k}'\sigma', \vec{k}\sigma)$. The author is interested here only in the angular dependence and the spin dependence of the matrix scattering. A detail knowledge of the interaction mechanism of the particles participating in the reaction is necessary for the complete theoretical computation of the scattering matrix. When using the invariance of the Hamiltonian of the system with respect to the rotations and reflections in the space, however, such properties of the scattering matrix can be eliminated as do not depend upon the mechanism of the interaction. For this purpose S is disintegrated according to the eigenfunctions $Y_{JM}(\vec{k}\sigma)$ of the operators of the total angular momentum, its projection M and the

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Angular Operators for Nuclear Reactions.

56-6-34/56

reflection operator in the initial - and final state. Besides J and M , these functions are also characterized by the parity π and the quantum numbers ν . The present paper is arranged in the following sections: The scattering of mesons by nucleons, the photoproduction of mesons on nucleons, the scattering of photons by nucleons, the scattering of nucleons by nucleons, the reactions $\gamma + N \rightarrow \pi + D$, the reactions $\gamma + D \rightarrow p + n$ and $\gamma + D \rightarrow \pi + D$.

Some conclusions: The angular operators of the phase analysis permit a generalized phase analysis of the scattering amplitude as well as the determination of the angular distribution and the polarization of the particles on the occasion of partial transitions. Further, the angular operators are very convenient when separating the angular variables into equations of various kinds.

(No illustrations).

ASSOCIATION: Physical Institute "P.N. Lebedev" of the Academy of Sciences of the U.S.S.R.

PRESENTED BY:

SUBMITTED: 14.3.1957

AVAILABLE: Library of Congress

CARD 2/2

RITUS, V. I.

AUTHOR: Ritus, V.I. 56-5-30/46

TITLE: On the Invariant Representation of the Scattering Matrix (Ob invariantnom predstavlenii matritsy rasseyaniya)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 5, pp. 1264-1267 (USSR)

ABSTRACT: The matrices for the scattering according to the reaction $a+b \rightarrow a'+b'$ with the symbol S are expressed by a finite number of spin operators Q_i . These are invariant with respect to rotation and reflection. If the initial- and final spin for a reaction are assumed, a method is given to set up the operators Q_i and to determine their number. Also the boundary conditions to which the appearance and the number of the operators Q_i are subjected, are given, which are caused by the invariance of the scattering matrices compared to changes in time. The representation of the matrices $S(\underline{k}', \underline{k})$ by the operators Q_i is shown by means of examples for pure elastic scattering processes ($E=D$), ($F=-E$), and ($H=-G$). The sign - indicates that

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56-5-30/46

On the Invariant Representation of the Scattering Matrix

the inner parity of the system changes. There are 4 references,
2 of which are Slavic.

ASSOCIATION: Physics Institute imeni P.N.Lebedev AN USSR (Fizicheskiy institut
im.P.N.Lebedeva AN SSSR)

SUBMITTED: May 24, 1957

Available: Library of Congress

Card 2/2

RITUS, V. I.: Master Phys-Math Sci (diss) -- "On the theory of reactions with polarized particles and nu-quanta". Moscow, 1958. 6 pp (Acad Sci USSR, Phys Inst im P. N. Lebedev), 150 copies (KL, No 8, 1959, 134)

24(5)

SOV/56-35-6-25/44

AUTHOR: Ritus, V. I.

TITLE: Spin Structure of the Scattering Matrix for Reactions Involving γ -Quanta (Spinovaya struktura matritsy rasseyaniya dlya reaktsiy s uchastiyem γ -kvantov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 6, pp 1485-1487 (USSR)

ABSTRACT: Already in an earlier paper (Ref 1) the author investigated the invariant representation of the scattering matrix for the reactions of the type $a + b \rightarrow a' + b'$

$S(\vec{k}', \vec{k}) = \sum_i A_i(\vec{k}', \vec{k}) Q_i(\vec{k}', \vec{k}, \vec{T})$. In the present paper the

analogous representation of the scattering matrix $S(\vec{k}', \vec{k})$ for reactions in which γ -quanta participate is carried out. The reactions concerned are of the type $\gamma + b \rightarrow a' + b'$, $\gamma + b \rightarrow \gamma' + b'$, where the particles b and b' as well as the system $a' + b'$ are assumed to have an arbitrary spin and internal parity. For the purpose of this representation, the author proceeds from a development according to the spin operators Q_i , which are invariant with respect to rotations.

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SOV/56-35-6-25/44

Spin Structure of the Scattering Matrix for Reactions Involving γ -Quanta

A method of setting them up is given and their shape and number is determined. Also the influence exercised by taking account of the invariance conditions in the case of time reversal, upon the Q_i is investigated. The expressions for $S(k'k)$ are

given for the following cases:

1) For reactions of the type $\gamma + b \rightarrow a' + b'$;

$$S = S' = 0. (+);$$

$$S = S' = 1/2. (-);$$

$$S = S' = 1. (+);$$

$$S = 0, S' = 1 \text{ or } S = 1, S' = 0. (+).$$

2) For reactions of the type $\gamma + b \rightarrow \gamma' + b'$;

$$S = S' = 0. (+);$$

$$S = S' = 1/2. (+);$$

$$S = S' = 1. (+).$$

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SOV/56-35-6-25/44

Spin Structure of the Scattering Matrix for Reactions Involving γ -Quanta

There are 3 references, 2 of 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)

SUBMITTED: June 23, 1958.

Card 3/3

MET'YUS, P. [Matthews, P.T.]; RITUS, V.I. [translator]; USACHEV, Yu.D.
[translator]; BURTSEV, ~~A.K., red.~~; REZOUKHOVA, A.G., tekhn.red.

[The relativistic quantum theory of elementary particle inter-
actions] Relativistskaia kvantovaia teoriia vzaimodeistvii
elementarnykh chastits. Moskva, Izd-vo inostr.lit-ry, 1959.
184 p. (Translated from the English) (MIRA 12:11)
(Particles, Elementary) (Quantum theory)

21 (7)

AUTHOR:

Ritus, V. I.

SOV/56-37-1-34/64

TITLE:

Angular and Polarization Analysis of Reactions of the $a + b \rightarrow a' + b' + c'$ Type (Uglovoy i polarizatsionnyy analizy reaktsiy tipa $a + b \rightarrow a' + b' + c'$)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 1(7), pp 217 - 223 (USSR)

ABSTRACT:

In the present paper, the author constructs angular operators for the reactions $a + b \rightarrow a' + b' + c'$, in which the spin of the initial system and of the final system does not exceed the value 1, and also the operators for the similar reactions with γ -quanta. The author makes at first some general remarks. The momenta of the particles are connected by the relations

$$\vec{p}_a + \vec{p}_b = \vec{p}'_a + \vec{p}'_b + \vec{p}'_c = \vec{P}, \quad E_a + E_b = E'_a + E'_b + E'_c = E.$$

$E_a = \sqrt{\vec{p}_a^2 + m_a^2}$ denotes the energy of the particle a etc; E and \vec{P} the energy and the momentum of the system, respectively. The angular operators constitute scalar products of the \vec{J} -vectors of the initial and final systems $\psi_{JM}(\vec{k})$ and $\psi_{JM}(\vec{k}_1, \vec{k}_1)$:

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Angular and Polarization Analysis of Reactions of
the $a + b \rightarrow a' + b' + c'$ Type

SOV/56-37-1-34/64

$$L_{J\gamma,\nu}(\vec{k}_1, \vec{k}_2; \vec{k}) = \sum_M \psi_{JM,\nu}(\vec{k}_1, \vec{k}_2) \psi_{JM,\nu}^*(\vec{k}).$$
 J, M, ν denote the total angular momentum, its projection, and the totality of eigenvalues of the operators, which commute with the total angular momentum. In the next part, the explicit form of the angular operators is determined. At first, the form of the angular operator (polynomial) for spinless particles is indicated, then the operators for the couplings $\vec{l}_1 + \vec{l}_2 = \vec{l}'$, $\vec{l}' + \vec{s}' = \vec{j}$ and $\vec{l}_1 + \vec{s}' = \vec{j}$, $\vec{j} + \vec{l}_2 = \vec{j}$ are calculated. The fourth part of the present paper deals with reactions under participation of j -quanta. The construction of the angular operators of a reaction under participation of a photon is reduced to the application of the "polarization operators" $[1(1+1)]^{-1/2} (\vec{e} \partial/\partial \vec{k})$ and $[1(1+1)]^{-1/2} (i[\vec{k} \vec{e}] \partial/\partial \vec{k})$ to the angular operators of a similar reaction, in which the photon is replaced by a scalar and a pseudoscalar particle with the spin zero. Conclusion: The angular operators fully determine the angular distribution and

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Angular and Polarization Analysis of Reactions of
the $a + b \rightarrow a' + b' + c'$ Type

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the polarization of the particles in the transition $J\psi \rightarrow J\psi'$. As the differential cross section $d\sigma/d\Omega$ and the polarization of the scattered particles (i.e. the mean values $\langle \Omega \rangle'$ of some spin operators Ω) are connected with the scattering amplitude $T = S^{-1}$ by the relations $d\sigma/d\Omega = \text{Sp}(T\varrho T^+)$, $\langle \Omega \rangle' = \text{Sp}(\Omega T\varrho T^+) / \text{Sp}(T\varrho T^+)$ (ϱ denoting the density matrix of the incident particles), the coefficients $S_{J\psi, J\psi'}(E, p_c')$ can be determined by experimental measurement of $d\sigma/d\Omega$ and $\langle \Omega \rangle'$, i.e. a phase analysis can be carried out. If, on the other hand, the scattering matrix satisfies any equation, the determination of such equation is facilitated. The author thanks I. Ye. Tamm, who suggested this work, as well as Ya. Fisher and S. Chulli for the supply of their paper before its publication. There are 3 references, 1 of which is Soviet.

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

SUBMITTED: February 7, 1959
Card 3/3

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B006/B070

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AUTHOR: Ritus, V. I.

TITLE: Relativistic Covariant Spin Structure of the S-Matrix

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 38, No. 5, pp. 1489 - 1498

TEXT: A reaction of the type $a+b \rightarrow a'+b'$ is considered. The system a, b can be described by the projections of the spin, μ and ν ; the four-momenta p, q for which the following relations hold: $|p| = m_a$, $|q| = m_b$, or, the four-momenta t, k with $t = p+q$, and $k = \frac{1}{2}(p-q) \cdot \frac{1}{2}(p+q)(p^2 - q^2)/(p+q)^2$; and the invariant condition $k^2 = [p^2 q^2 - \frac{1}{4}(t^2 - p^2 - q^2)^2] t^{-2}$, $(tk) = 0$. The system a', b' is described in an analogous manner by primed quantities. The S-matrix and the operator $\sigma(p'q'; pq)$ are written in this representation, and their invariance properties studied (Section 2). The structures of the matrix $S(\vec{p}'\vec{q}'; \vec{p}\vec{q})$ and the operator $\sigma(p'q'; pq)$ are studied in Section 3 for

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Card 1/2

Relativistic Covariant Spin Structure of the S Matrix

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B006/B070

the case when the particles have the spin 0 or 1/2. The S-matrix is so constructed that each of its elements corresponds to a transition between levels having definite spins in the initial and final states. The following reactions are separately studied for different possible combinations of spins of participating particles with spins 0 and 1/2: $a+b \rightarrow a'+b'$, $\gamma+b \rightarrow a'+b'$, $\gamma+b \rightarrow \gamma'+b'$, and $a+b \rightarrow \gamma_1 + \gamma_2$. It is finally pointed out that the operator $\sigma(p'q';pq)$ and the matrix $M(\vec{p}'\vec{q}';\vec{p}\vec{q})$ considered in this paper for the reactions of polarized particles in the relativistic theory may be applied to the construction of dispersion relations and other problems. There are 4 references: 2 Soviet, 1 US, and 1 Japanese.

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

SUBMITTED: September 19, 1959

Card 2/2

S/056/61/040/001/033/037
B102/B212

24.450

AUTHOR:

Ritus, V. I.

TITLE:

Inhomogeneous Lorentz group transformations and relativistic kinematics of polarized states

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 1, 1961, 352-364

TEXT: The present paper is a contribution to the problem of representing the inhomogeneous Lorentz group. Such representations are examined as correspond to physical systems with mass, momentum, and internal moment, whose polarization can be described by projections of the internal moment on a given direction or of the total moment on the direction of the momentum (helicity); furthermore, such representations as correspond to physical systems having zero mass, are considered, and whose polarization can be described only by a projection of the total moment on the direction of the momentum. At first the usual definitions of quantities and some fundamental relations for the transformation of the inhomogeneous Lorentz group are discussed (space-time translations, space rotations and pure

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B102/B212

Inhomogeneous Lorentz group...

Lorentz transformations). The translation ($x'_\mu = x_\mu + a_\mu$, where the four-vector a_μ describes amount and direction of the translation) is characterized by the unitary operator $D(a) = \exp(-ia_\mu p_\mu)$, the rotation by the unitary rotation operator $R(\vec{n}, \varphi) = \exp(-i\varphi \vec{n} \cdot \vec{M})$, the rotation through an angle φ takes place about the axis \vec{n} , and \vec{M} is the moment operator of the system. Pure Lorentz transformations are characterized by the unitary operator $L(\vec{v}) = \exp(-i\vec{v} \cdot \vec{N})$, where $\text{th} \chi = v/c$, \vec{N} denotes the generator of the pure Lorentz transformation. The operators \vec{M} and \vec{N} form the antisymmetric four-tensor of the moment $M_{\mu\nu}$: $\vec{M} = (M_{23}, M_{31}, M_{12})$, $i\vec{N} = (M_{41}, M_{42}, M_{43})$. The following gives a definition of the conservation operators and the inner moment of the system using an example of a physical system with four-momentum p_μ and four-moment $M_{\mu\nu}$. The moment $M' = M - \kappa^{-1}(p_0 + \kappa)^{-1} [\vec{p} [\vec{p} \vec{M}]] - \kappa^{-1} [\vec{p} \vec{N}]$ which represents the moment of a system at rest, is defined as the inner moment. After some calculations the following relations are obtained: $\vec{M} = -i [\vec{p} \frac{\partial}{\partial \vec{p}}] + \vec{J}$.

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Inhomogeneous Lorentz group...

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B102/B212

$N = -ip_0 \frac{\partial}{\partial \vec{p}} - (p_0 + \kappa)^{-1} [\vec{p} \vec{J}]$; \vec{J} is represented by the well-known $(2J+1)$ -row square matrices. A representation of momentum and inner moment for a system with non-vanishing mass is examined next. For $Q(\Lambda, p)$, a unitary operator in the space of the projections of the moment one obtains:

$$Q(\Lambda(\lambda), p(x)) = \exp \int_x^{x+\lambda} f(x', \vec{J}) dx'; \text{ for the rotation: } Q(R_{\vec{n}, \varphi}, p) = \exp(-i\varphi \vec{n} \vec{J});$$

and for a pure Lorentz transformation $Q(L_{\vec{v}}, p) = \exp(-i\omega \vec{n} \vec{J})$, $\vec{n} = [\vec{p} \vec{v}] / |[\vec{p} \vec{v}]|$; $\eta = 2 \arctan \frac{|[\vec{p} \vec{u}]|}{\vec{p} \vec{u} + (p_0 + \kappa)(\gamma + 1)}$. For this representation all transformations

of the inhomogeneous Lorentz group defining the relativistic polarization kinematics are given explicitly. Furthermore, the author examines the representation of momentum and helicity of a system with non-vanishing mass ($\kappa \neq 0$). Numerous relations are obtained such as for rotation:

$$S(R_{\vec{n}, \varphi}, p) = \exp[-i\eta \vec{k} \vec{J}], \text{ where } \eta = 2 \arctan \frac{(\vec{p} \vec{k} + \vec{n} \vec{p}) \tan(\varphi/2)}{p + \vec{p} \vec{k} + (\vec{k} | \vec{n} \vec{p}) \tan(\varphi/2)}; \text{ and for a pure Lorentz transformation } S(L_{\vec{v}}, p) = \exp[-i\lambda \vec{m} \vec{J}], \text{ with}$$

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Inhomogeneous Lorentz group...

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$$m = \left[\left(\rho nk \operatorname{tg} \frac{\alpha}{2} \right)^2 + \left(\rho + pk + k [np] \operatorname{tg} \frac{\alpha}{2} \right)^2 \sin^2 \frac{\alpha - \omega}{2} \right]^{-1/2} \times$$

$$\times \left\{ [kp] k \frac{\rho (nk)}{\rho + pk} \sin \frac{\alpha - \omega}{2} + [kp] \left(\operatorname{tg} \frac{\alpha}{2} + \frac{k [np]}{\rho + pk} \right) \sin \frac{\alpha - \omega}{2} + \right.$$

$$\left. + k\rho (nk) \operatorname{tg} \frac{\alpha}{2} \cos \frac{\alpha - \omega}{2} \right\}, \quad (56)$$

$$\lambda = 2 \operatorname{arc} \operatorname{tg} \left[\left(\frac{\rho nk \operatorname{tg} (\alpha/2)}{\rho + pk + (k [np]) \operatorname{tg} (\alpha/2)} \right)^2 \sec^2 \frac{\alpha - \omega}{2} + \operatorname{tg}^2 \frac{\alpha - \omega}{2} \right]^{1/2}. \quad (57)$$

The passage to the limit $\kappa \rightarrow 0$ is then performed, and analogous relations are derived for a zero-mass system. Expressions such as the following

are obtained: $\vec{M} = -i \left[\vec{p} \frac{\partial}{\partial \vec{p}} \right] + I_3 \frac{pk + \vec{p}}{p + pk}$, $\vec{N} = -ip \frac{\partial}{\partial \vec{p}} + I_3 \frac{[k\vec{p}]}{p + pk}$;

$S(R_{\vec{n}, \varphi}, p) = \exp(-i\eta I_3)$, $\eta = 2 \operatorname{arc} \operatorname{tg} \frac{(\rho nk + np) \tan(\varphi/2)}{p + pk + (k [np]) \tan(\varphi/2)}$,

$S(L_{\vec{v}}, p) = \exp(-i\lambda I_3)$, $\lambda = 2 \operatorname{arc} \operatorname{tg} \frac{\rho nk \tan(\alpha/2)}{p + pk + (k [np]) \tan(\alpha/2)}$, $\vec{n} = \frac{[\vec{p}\vec{v}]}{[\vec{p}\vec{v}]}$.

(When $\kappa \rightarrow 0$, γJ_1 , γJ_2 , and J_3 tend toward I_1 , I_2 , and I_3 ; $I_1 = I_2 = 0$,

$(I_3)_{m'm} = m \delta_{m'm}$). D. A. Kirzhnits and Yu. M. Shirokov are mentioned.

There are 3 figures and 14 references: 3 Soviet-bloc and 11 non-Soviet-

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Inhomogeneous Lorentz group...

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bloc.

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

SUBMITTED: August 12, 1960

X

Card 5/5

RITUS, V.I.

Photoproduction of neutrinos on electrons and neutrino radiation
from stars. Zhur.eksp.i teor.fiz. 41 no.4:1285-1293 G '61.
(MIRA 14:10)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.
(Neutrinos) (Stars--Radiation)

NARozhnyy, N.B.; NIKISHOV, A.I.; RITUS, V.I.

Quantum processes in the field of a circularly polarized electromagnetic wave. Zhur. eksp. i teor. fiz. 47 no.3:940 S '64.
(MIRA 17:11)

1. Fizicheskiy institut imeni Lebedeva AN SSSR.

NIKISHOV, A.I.; RITUS, V.I.

Nonlinear effects in Compton scattering and pair production due to
absorption of several photons. Zhur. eksp. i teor. fiz. 47 no.3:1130-
1133 S '64. (MIRA 17:11)

1. Fizicheskiy institut imeni Lebedeva AN SSSR.

L 21733-66 EWT(1) GG/AT

ACC NR: AP6004944

SOURCE CODE: UR/0056/66/050/001/0255/0270

AUTHORS: Nikishov, A. I.; Ritus, V. I.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR
(Fizicheskii institut Akademii nauk SSSR)

TITLE: Ionization by means of an electromagnetic wave of systems coupled
by short-range forces

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50,
no. 1, 1966, 255-270

TOPIC TAGS: ionization, electromagnetic wave, angular ..
distribution, Coulomb interaction

ABSTRACT: The authors first ^{21,4475} show that although the ionization of an
atom by the field of an ²¹electromagnetic wave is a fairly complicated
process, much information about it can be obtained by first studying
the ionization of a simpler system, namely the bound state of a spin-
less particle moving in a field of short-range forces, for which the

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L 21733-66

ACC NR: AP6004944

ionization probability can be readily obtained. The angular and energy distributions of the outgoing particles, the distributions over the number of absorbed photons, and the dependence of the probability on the polarization of the electromagnetic wave and polarization of the bound system are examined by means of this approach. The ionization probability is obtained by quantum mechanical methods which leads to several important physical conclusions about the process, and make it possible to separate the effect of the Coulomb forces in the ionization by a constant field. The total ionization probabilities in the fields of linearly and circularly polarized waves are obtained, and also the distributions of the ionization probabilities over the charged-particle emission angles and over the number of photons absorbed from the field. A relativistically gauge-invariant model is considered, describing the splitting of a neutral or charged system into two particles of arbitrary masses. Conditions under which the splitting probability in a weak field depends substantially on the polarization of the initial are indicated. The results are applicable to the description of multiquantum splitting of negative and molecular ions. Orig. art. has: 39 formulas [02]

SUB CODE: 20/ SUBM DATE: 12Aug65/ ORIG REF: 006/ OTH REF: 004

Card

2/2 *AC*

ACC NR: AP6037084

SOURCE CODE: UR/0056/66/051/ 5/1544/1549

AUTHOR: Ritus, V. I.

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

TITLE: Shift and splitting of atomic levels by the field of an electromagnetic wave

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 5, 1966, 1544-1549

TOPIC TAGS: line shift, line splitting, atomic spectrum, wave function, spectral line, laser application, *electromagnetic wave*

ABSTRACT: The author determines the shift and splitting of the frequency of the fundamental harmonic of the stationary wave function of an electron situated in a Coulomb field and the field of an electromagnetic wave, by approximating the wave function with the aid of its fundamental harmonic. The formulas obtained determine the frequencies of the most intense spectral lines of the light emitted by the atoms in the field of an electromagnetic waves. Only hydrogen like atoms are considered with degenerate energy levels. The treatment is confined to the shift and splitting of the first two levels. Separate analysis is made for linearly and circularly polarized waves. It is shown that the experimental measurements of the frequencies of

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ACC NR: AP6037084

the most intense spectral lines, especially with the aid of a laser beam, can serve as a means of determining the amplitude of the field strength of the wave. The author thanks V. L. Ginzburg and A. I. Nikishov for a discussion of the work. Orig. art. has 12 formulas.

SUB CODE: 20/ SUBM DATE: 06Jun66/ ORIG REF: 004/ OTH REF: 003

Card 2/2

NIKISHOV, A.I.; RITUS, V.I.

Quantum processes in the field of a plane electromagnetic wave
and in a constant field. Zhur. eksp. i teor. fiz. 46 no.2:776-796
F '64. (MIRA 17:9)

1. Fizicheskiy institut imeni Lenedeva AN SSSR.

L 11012-65 EWA(k)/EWT(1)/EEC(k)-2/EEC(b)-2/EWP(k)/T/EWA(m)-2 PI-1/Po-1
IJP(c)/ASD(a)-5/AFWL/SSD/ESD(gs)/ESD(t) WO/JHB

ACCESSION NR: AP4046433

S/0056/64/047/003/1130/1133

AUTHORS: Nikishov, A.I.; Ritus, V. I.

TITLE: Nonlinear effects in Compton scattering and pair production, connected with absorption of several photons (B)

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 3, 1964, 1130-1133

TOPIC TAGS: Compton scattering, pair production, photon absorption, annihilation, nonlinear effect

ABSTRACT: This is a continuation of earlier work by the authors (ZhETF v. 46, 776, 1964), dealing with photon emission induced by an electron, pair production by a photon, and single-photon annihilation of an electron and positron in the field of a polarized electromagnetic wave of arbitrary intensity. The interest in this problem is due to the impending possibility of using laser beams to measure

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ACCESSION NR: AP4046433

probabilities that are nonlinear in the photon number density, primarily two-quantum absorption processes. In the present article are discussed effects in Compton scattering and pair productions which are nonlinear in the photon number density and are due to the absorption of more than one photon from the wave; the probabilities of these processes are derived from the earlier results. Although a perturbation-theory analysis of effects involving the absorption of several photons leads to difficulties connected with the unlimited growth of the electron propagation function, it is shown that this difficulty can be eliminated by separating out from the diagram a set of resonance parts and replacing it by separately determined bare function. Orig. art. has: 3 figures and 5 formulas.

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

SUBMITTED: 15Apr64

ENCL: 00

SUB CODE: NP

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OTHER: 001

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ACCESSION NR: AP4046410 8/0056/64/047/003/0930/0940

AUTHORS: Narozhny*y, N. B.; Nikishov, A. I.; Ritus, V. I.

TITLE: Quantum processes in the field of a circularly polarized electromagnetic wave B

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 3, 1964, 930-940

TOPIC TAGS: photon emission, pair production, pi meson product, polarized electromagnetic wave, circular polarization

ABSTRACT: The authors consider the effect of the field of a circularly polarized electromagnetic wave of arbitrary intensity on various quantum processes. The probability and intensity of photon emission by an electron, the probability of pair production by a photon, and the probability of the $\pi \rightarrow \mu + \nu$ decay in the field of such a wave are determined. The expressions derived for the proba-

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