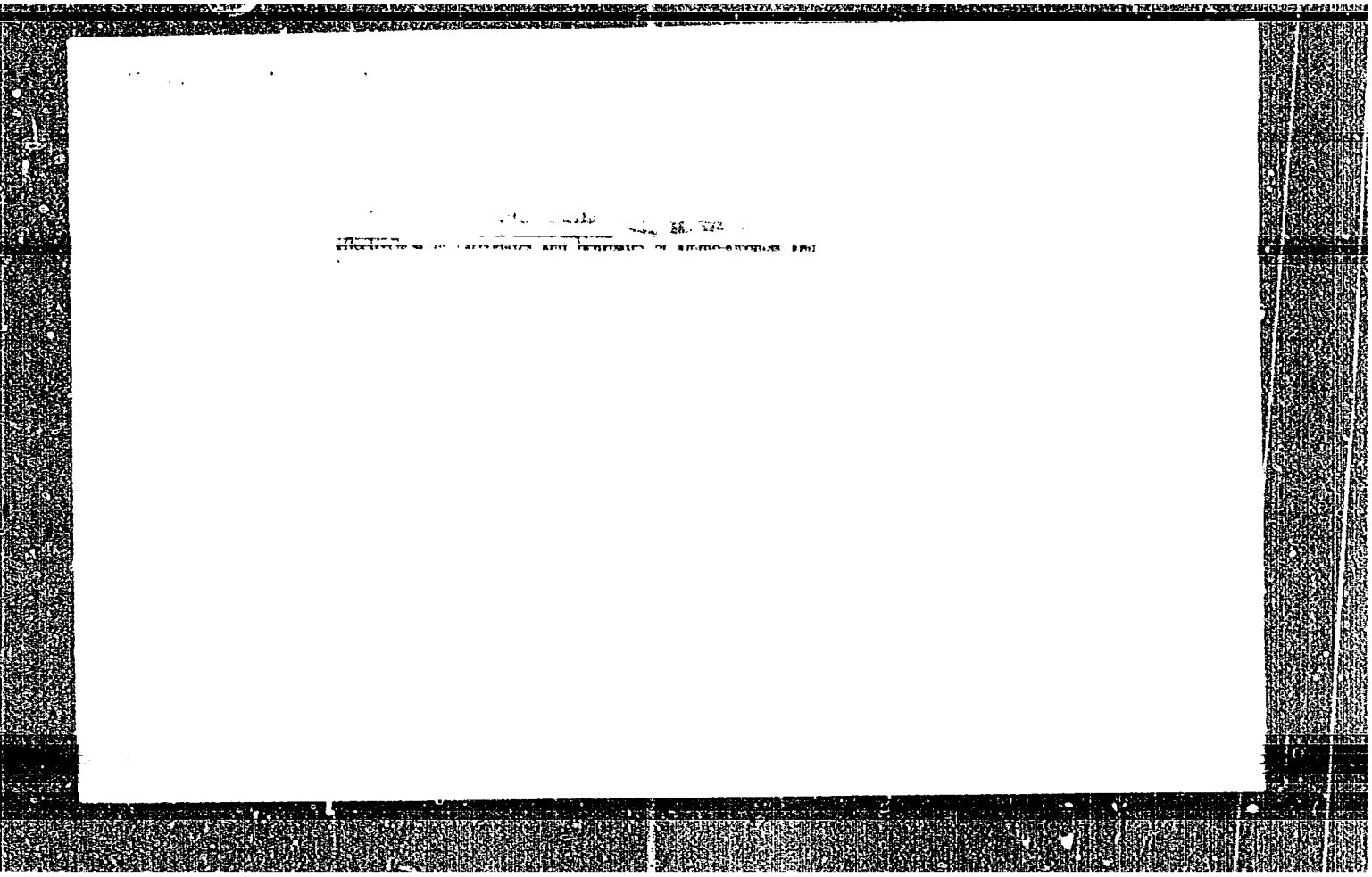


APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R000103

BALDA, M.

"Industrial Equipment for Measuring, Controlling, and Regulating Machinery". p. 220 (STROJIRENSTVI, Vol. 3, No. 3, March 1953, Praha, Czechoslovakia).

SO: Monthly List of East European Accessions, LC, Vol. 3, No. 5, May 1954, Unclassified.

BALDA, M.

Relationship between the amplitude-phase characteristics and the transmission function of a control circuit. p. 25.
STROJNICKY SBORNIK, Prague, No. 8, 1954.

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

BALDA, M

PHASE I BOOK EXPLOITATION CZECH/3715

Straka, Vladimír, Engineer; Milan Balda, Doctor, Engineer; and Miloslav Krampera, Candidate of Technical Sciences, Engineer

Regulace v průmyslové aplikaci (Industrial Use of Automatic Control) Praha, Státní naklad. technické lit-ry, 1958. 174 p. 2,200 copies printed.

Tech. Ed.: Marie Králová; Resp. Ed.: Vladimír Spácil, Engineer.

PURPOSE: This book is intended for general technical workers engaged in the operation and design of automatic control systems in chemical, food processing, and related industries.

COVERAGE: The book deals with examples of application of control and regulation installations in production units of the chemical industry. The first part of the book presents practical information, useful general rules, and simple discussions about control circuits, indispensable elements for the solution of automation problems in industrial production. The rest of the book presents the solution of several examples from many years of practical experience in designing and building industrial installations for automatic control and regulation. In the conclusion, fundamental observations on the economics of automation are summarized,

Card 1/5

and examples of calculation of economies obtained are presented. No knowledge of the theory of control circuits on the part of the reader is assumed. Required knowledge of mathematics and calculations is reduced to a minimum. A basic knowledge of elements of measuring and regulating systems is assumed. There are 16 references: 3 Czech, 3 English, 2 German, and 8 Soviet.

TABLE OF CONTENTS:

Card 2/5

AVAILABLE: Library of Congress (TL230.874)

Card 5/5

JP/rlm/ea
8-25-5

COUNTRY : Czechoslovakia
CATEGORY :

ABS. JOUR. : RZKhim., No. 22 1959, No. 75876

AUTHOR : Balda, M.
INST. : Not given
TITLE : Extremal Regulators

ORIG. PUB. : Automatizace, 2, No 1, 15-18 (1959)

ABSTRACT : The operation of extremal regulators is discussed on the basis of a number of examples, particularly with reference to the regulation of the evaporation of the liquor in the production of sugar. The regulators described are a step in the transition from the regulation of physical quantities to the regulation of process quality, and utilize logical elements in addition to elements carrying out mathematical operations.

I. Ikhlov

CARD: 1/1

151

BALDA, M.

PHASE I BOOK EXPLOITATION SOV/4938

Strejc, Vladimír, Engineer, Milan Balda, Engineer, Docent, and Miloslav Krampera, Candidate of Technical Sciences, Engineer

Primeneniye avtomaticheskogo regulirovaniya v promyshlennosti (Industrial Application of Automatic Control) Translated from the Czech by B. N. Barbarov. Moscow, Gostoptekhnizdat, 1960. 228 p. 7,200 copies printed.

Ed.: G. M. Ulanov, Doctor of Technical Sciences; Exec. Ed.: A. A. Gor'kova; Tech. Ed.: I. G. Fedotova.

PURPOSE: This book is intended for workers, foremen, and technical personnel in industry.

COVERAGE: The book describes the present state and the prospects for further development of automation in the chemical, fuel, and raw-materials industries. The information contained in the book is based on the experience of Czechoslovakia and other countries in automation systems. A series of general problems and methods of automation of some industrial processes are presented. Basic technical requirements are systematically reviewed, and layout diagrams for industrial automation, methods of measuring

Card 1/5

signals, and information used in industrial-control systems are studied. Simplified evaluations of the technical and economic efficiency of automation and the design elements of automatic-control systems are given. The present state-of-the-art in automation in Czechoslovakia is discussed in the preface to the translation. No personalities are mentioned. There are 151 references: 103 Soviet, 21 Czech, 17 English, 9 German, and 1 French.

TABLE OF CONTENTS:

Card 3/5

AVAILABLE: Library of Congress (TJ213.S747)

Card 5/5

JP/dfk/os
4/10/61

BALDA, M.

PHASE I BOOK EXPLOITATION SOV/4387

Strejc, Vladimír, Engineer, Miroslav Šalamon, Doctor, Engineer, Zdeněk Kotek, Engineer, Candidate of Technical Sciences, and Milan Balda, Docent, Engineer, Candidate of Technical Sciences

Osnovy teorii avtomaticheskogo regulirovaniya (Basic Theories In Automatic Regulation) Moscow, Gostoptekhizdat, 1960. 332 p. 5,200 copies printed. Translated from the Czech.

Translator: G. M. Gol'denberg, Engineer; Ed.: M. P. Simoyu; Executive Ed.: A. A. Gor'kova; Tech. Ed.: A. V. Trofimov.

PURPOSE: This book is intended for technical personnel engaged in the automatic regulation of industrial processes.

COVERAGE: The book presents the fundamentals of the theory of automatic regulation of linear and nonlinear systems, and of intermittent types of regulation. Numerous methods of analyzing regulation systems with regard to the stability of regulation processes and the determination of the optimum adjusting of

Card 1/7

regulators are reviewed. No personalities are mentioned. References accompany most sections of the volume. An additional list of references contains 39 titles, 16 Soviet, 9 Czech, 8 English and 6 German.

TABLE OF CONTENTS:

BALDA, Milan, doc., ins., C.Sc.

Pneulog, a new system of pneumatic logical control. Automatizace 5 no.3: 58-60 Mr '62.

BALDA, Milan, doc., ... , ...o.

Automatic control of continuous processes. Automatizace 5 no.6:153-157. Je '62.

S/271/63/000/001/018/047
D413/D308

AUTHOR: Balda, Milan

TITLE: Pneulog - a new pneumatic system of logic devices

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 1, 1963, 46, abstract 1A253 (Automatizace, v. 5, no. 3, 1962, 58-60 (Czech.))

TEXT: Information is given on a new system of pneumatic logic elements developed in the automatics faculty of the CVUT Institute (Czechoslovakia). The intention of the paper is to acquaint specialists working in the field of automation with the extensive possibilities of this system. The Pneulog system of logic elements is based on a universal two-argument element of type NO. The following circuits are shown, all designed round the basic element: logical addition, coincidence, binary counter cell, memory, relaxation oscillator, and others. It is stated that the Pneulog type of pneumatic control circuits operating on a flow of air take up the

Card 1/2

Pneulog - a new pneumatic system ... S/271/63/000/001/018/047
B413/B308

same space in relation to the pneumatic systems generally used at present as transistors do in relation to electromagnetic relays. The advantages of pneumatic control systems are listed: insensitivity to bumps, acceleration, variation of ambient temperature etc. With suitable choice of materials, pneumatic elements can operate in highly reactive chemical media, and can also withstand heavy doses of radiation. Their shortcomings are low stage gain and the difficulty of designing miniature elements. 10 figures. 12 references.
[Abstracter's note: Complete translation]

Card 2/2

L 00853-67 EWP(w)/T IJP(c) EM/WW/DJ
ACC NR: AT6029433 SOURCE CODE: CZ/0000/65/000/000/0104/0125

AUTHOR: Marcelli, Vladimir (Doctor; Engineer); Balda, Miroslav (Enginer)

ORG: Lenin Works (Leninovy zavody), Plzen

TITLE: A study on vibrations of large turbines at Lenin Works in Plzen

SOURCE: Celostatna konferencie o problemoch dynamiky strojov. 2d, Smolenice, 1961. Dynamika strojov (Dynamics of machines); sbornik prac z konferencie SAV. Bratislava, Vyd-vo SAV, 1963, 104-125

TOPIC TAGS: vibration analysis, turbine rotor, vibration damping

ABSTRACT: The problem of vibrations, especially the critical speed of large stationary turbines, has been under study for some time at the Research Institute of the Lenin Works in Plzen. In the present paper the factors such as the elasticity and vibration-damping capacity of the oil film, yielding of bearings, and the effect of the foundation are analyzed and evaluated. The measurement of dynamic rigidity of the bearing stands, conducted on a prototype of a 100-Mw turbine installed at the Tisova Power Station is described. A special power vibrator was used for bearing supports. Results were verified on the URAL-I computer by the

Card 1/2

L 00863-67
ACC NR: AT6029433

Prohl's modified difference method. Investigations on the mechanical models were also conducted using the homothety method. Mathematical definitions of the homothetical values are given, and the dependence of critical revolutions on rotor system parameters such as shear effect, transverse vibrations of rotors, gyroscopic effect of rotating bodies, bending moment, and rotary inertia of mass is established. By this process the critical revolutions of a 200-Mw turbo-set presently under development were also determined. Diagrams showing the deflection curves of the rotor systems under both absolute-rigidity-of-bearings and pliable-bearings conditions are presented in the source. Orig. art. has: 8 figures and 66 formulas.

[KP]

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 006/ SOV REF: 002/

Card 2/2 pb

BALDAN, S.; BOBROV, V.A.; MARINOV, N.A.

Earthquake on December 4, 1957 in the Gobi Altai, the Mongolian People's Republic. Sov.geol. 1 no.11:131-146 N '58. (MIRA 12:4)

1. Ministerstvo geologii i gornoy promyshlennosti Mongol'skoy Narodnoy Respubliki. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii.
(Altai Mountains--Earthquakes)

BAZANOVA, M.U.; BALDAN, Sundiyn

Secretion of amino acids by the abomasum glands in sheep.
Izv. AN Kazakh. SSR. Ser. biol. nauk 3 no.4:65-70 Jl-Ag '65.
(MIRA 18:11)

RAVDANDASH, T., Cand Vet Sci--(diss) "Morphological and certain physico-chemical blood indices of the Mongolian cattle, yaks, and their crosses of the forest-steppe region of the Mongolian People's Republic" Len, 1958. 18 pp (Len Vet Inst of the Min of Agric USSR), 150 copies (KL,23-58, 112)

BALDAN-D[illegible]RZ[illegible], D., Cand Med Sci—(diss) "Effect of tissue therapy on the morphologic blood content in rabbits after their total irradiation with [illegible] Roentgens." Odessa, 1958. 12 pp (Odessa State Med Inst im N.I.Pirogov), 200 copies (KL,11-58,125)

BALDANDORZH, .D.

Effect of tissue therapy on the morphology of rabbit blood following total body X-irradiation. Vrach.delo no.10:1073-1075 O '58 (MIRA 11:11)

1. Kafedra farmakologii (zav. - prof. S.V. TSyganov) i kafedra rentgenologii i radiologii (zav. - prof. Ye.D. Dubovyy) Odesskogo meditsinskogo instituta.
(BLOOD CELLS)
(X RAYS--PHYSIOLOGICAL EFFECT)

BUCHMAKIN, I.N.; BOLDYNGIN, B.; MOLDENHO, F.Ya.

Equilibrium between liquid and vapor in the systems carbon tetrachloride - butyl acetate, carbon tetrachloride - butyl alcohol. Zhur.prikl.khim. 38 no.6:1313-1319 Je '65. (MIRA 18:10)

MLADENOVA, M.; DASKALOVA, S.; BALDARANOV, D.

Treatment of thyrotoxicosis with lysates. Suvrem. med., Sofia 8 no.2:81-86 1957.

1. Iz Okrushnata bolnitsa - Sofiia. (Gl. lekar; Manchev)
(HYPERTHYROIDISM, therapy,
lysates (Bul))

BALDASZTI, L.

For the development of stock breeding on collective farms. p. 19. (Magyar Mezogazdasag, Vol. 11, no. 5, Mar. 1956 Budapest)

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

BALDAYEV, M. R.

"Lesson on the Theme, 'Neural Regulation of the Circulation of the Blood'," Est v Shkole, No.4, 1952

BALDAYEV, M. R.

"Developing Physiological Concepts in the Course in Zoology," Est. v Shkole, No.5, 1952

BALDAYEV, M.R., kand.ped.nauk

The system of a zoology trial textbook ("Zoology"; a textbook for secondary schools by V.F. Natali. Reviewed by M.R. Baldaev). Biol. v shkole no.5:89-92 S-O '58. (MIRA 11:11)

1. Tyumenskiy gosudarstvennyy pedagogicheskiy institut.
(Zoology--Study and teaching) (V.F. Natali)

BALDAYEV, M.R., kand.pedagogicheskikh nauk

"General methods for teaching biology" by B.V. Vsesviatskii. Reviewed by M.R. Baldaev. Biol. v shkole no.3:88-90 My-Je '61. (MIRA 14:7)

1. Tyumenskiy pedagogicheskiy institut.
(Biology--Study and teaching)
(Vsesviatskii, B. V)

BALDAYEV, M.R., kand.pedagogicheskikh nauk

"Study of human anatomy and physiology in secondary schools" by E.P. Brunovt. Reviewed by M.R. Baldaev. Biol. v shkole no.5:87-89 S-O '62. (MIRA 16:2)

1. Tyumenskiy pedagogicheskiy institut.
(Anatomy, Human—Study and teaching)
(Physiology—Study and teaching)

3-58-6-29/34

AUTHOR: Baldayev, R.L.

TITLE: Abroad (Za rubezhom) The Higher School in the Mongolian People's Republic (Vysshaya shkola Mongol'skoy Narodnoy Respubliki)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, Nr 6, pp 86 - 89 (USSR)

ABSTRACT: Higher education was started in the Mongolian People's Republic in 1940, when the Teachers' Evening Institute was organized. In the 1955/56 school year the country's higher educational institutions turned out over 600 highly qualified specialists [Ref. 1]. In Mongolia there are 4 vuzes - the University, Pedagogical Institute, Higher Party School and the Evening University; the total number of students being 3,200 [Ref. 2]. The leading institute is the Mongolian State University established in Ulan-Bator on 5 October 1942. In 1956, some of its faculties were reorganized into institutes. The university at present consists of 2 institutes and 3 faculties. The university is training scientific and pedagogical personnel in the field of natural and humanitarian sciences for the entire country. The USSR rendered great material help to the university when it was opened. This is confirmed by B. Shi-

Card 1/3

Abroad. The Higher School in the Mongolian People's Republic

rendyb, the university's first rector [Ref. 1]. Among the Soviet professors and instructors who went to render aid were Doctor of Philological Sciences, Professor S.I. Abakumov, and Doctor of Chemical Sciences, Professor L.I. Kashtanov. Since Soviet textbooks were being widely used in Mongolia, the problem of studying the Russian language arose. In secondary schools Russian is being taught, and in the university a 2-year course in Russian has been organized. Successful students are being granted scholarships. The term of study is 5 years. The university's Agricultural Institute and the scientific-experimental farms are situated on the River Tole. Since 1951 the university has been regularly issuing "Scientific Transactions". The philologists Ts. Damdinsuren and Sh. Luvsanvandan have contributed greatly to creating a new Mongolian written language. In 1954, B. Shirendyb and Ts. Damdinsuren participated in compiling the "History of the Mongolian People's Republic". The candidates of sciences B. Yarinpil, T. Ayurzan, M. Dash, P. Shinzhe, Zh. Gombo and others are engaged in problems of cattle breeding. Instructor M. Tseren is studying the physical-chemical properties of the country's mineral springs. Zh. Zhams-

Abroad. The Higher School in the Mongolian People's Republic

ran, a university worker, is studying methods of practical utilization of microelements and vitamins. B. Ragcha of the medical faculty has published articles on heart and lung diseases. The article contains detailed information on the Pedagogical Institute and the Higher Party School. There are 7 references, 2 of which are Soviet and 5 Mongolian.

Card 3/3

BALDAYEV, S.N.
Moscow Veterinary Acad, Min Higher Education USSR. Chair of Organic and Biological Chemistry.

BALDAYEV, S.N.: "The activity of the bood enzymes of highly productive cows." Moscow Veterinary Acad, Min Higher Education USSR. Chair of Organic and Biological Chemistry. Moscow, 1956
(Dissertation for the Degree of Candidate in Biological Sciences)

SO: Knizhnaya Letopis', No. 20, 1956

USSR/Human and Animal Physiology - Metabolism. Ferments. T-1

Abs Jour : Ref Zhur- Biol., No 18, 1958, 83862

Author : Baldayev, S.N.

Inst : Moscow Academy of Veterinary Medicine.

Title : Changes of Blood Ferments Activity in Cows During Lactation

Orig Pub : Tr. Mosk. vet. akad., 1957, 21, 256-265

Abstract : The activities of catalase, peroxidase, carbon anhydrase, lipase, alkaline phospatase, and protease in the blood of cows with various yearly milk yields was studied for a prolonged period of time. It was found that the changes in these activities of most of the blood ferments were connected with the physiological condition of the animals, chiefly with their milk productivity. -- L.A. Kashchevskaya

Card 1/1

GRANOVSKIY; DILL', A.; ORLOVSKIY, U.; GARIN, L.; VASIL'YEV, S.; BUDLYANSKIYL; BALDAYEV, V.; ZAKHAROV, A.; SMETANIN, I. (Kirov); STEPANOV (Barnaul); KHOMKA, Yuriy

News from everywhere. Sov.foto 22 no.11:44-45 N '62. (MIRA 16:1)

1. Fotokorrespondent TASS (for Granovskiy).
(Photography)

BALDENKO, D.F., inzh.

1VV 1,6/16 submersible single-screw pump. Gidr. i mel. 17 no.11:45-49 N '65. (MIRA 18:11)

1. Obshchestvennoye konstruktorskoye byuro po besshtangovym nasosam.

BALDER, Balint (Budapest)

Forum of innovators. Ujit lap 16 no.22:31 25 N '64.

BALDESOV, I.V., master-obmurovshchik, pensioner.

Quality of acid-resistant linings. Bum. prom. 33 no. 7:23 Jl '58.
(MIRA 11:7)

(Protective coatings)
(Woodpulp industry--Equipment and supplies)

BALDEV, I.

Studying, drawing conclusions, and mass utilization of Engineer Koval' ov's new method in construction. p. 12

Vol. 2, No. 2, 1955 STROITELSTROV, Sofiya, Bulgaria.

SOURCE: East European Accessions List. (EEAL) Library of Congress, Vol. 5, No. 1. January, 1956.

BALDEV, I.

Preparing the building site for construction in cold weather. p. 15.

Vol. 2, no. 9, 1955
STROITELSTVO
Sofiya, Bulgaria

So: Eastern European Accession Vol. 5 No. 4 April 1956

BALDEV, I.

Quality of construction production. p. 24.
TEKHNIKA, Sofiya, Vol. 4, no. 6, Aug./Sept. 1955.

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

BALDEV, I.

Problematical questions cor ng shortening the periods of time in construction. p. 10

STROITELSTVO. (Ministerstvo na stroezhite) Sofia, Bulgaria. Vol. 6, no. 8, 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 12, December 1959
Uncl.

BALDEV, Ivan, insh.

Some questions on the organization of the labor in construction industry. Trud i tseni 3 no.9:53-59 '61.

(Construction industry)

BALDEV, Ivan D., inzh.

Organization of cement transportation in hoppers. Tekhnika Bulg 11 no.2:46-49 '62.

BALDEV, Ivan, inzh.

Reservoirs of the petroleum refinery at Burgas. Stroitelstvo 10 no. 2:7-10 Mr-Ap '63.

BALDEV, Ivan, inzh.

Some problems in the planning and computation of labor productivity in building. Trud tseni 6 no. 2:44-53 '64.

1. BAL'DGARD, S.L.

2. USSR (600)

4. Technology

7. Electricity in modern technology. Moskva, Gosenergoizdat. 1952

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

BALDI, T.

Paleoecologic charter analysis of the Burdigalian-Helvetic layer line at Budafok in the area of Budapest. In German. p. 21

ANNALES. SECTIO GEOLOGICA. Budapest, Hungary, Vol. 2, 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 9, No. 2, Feb. 1960
Uncl.

BALDI, T.

GEOGRAPHY & GEOLOGY (Periodicals)

BALDI, T. Data on the stratigraphic geology of the environment of Budafok and Torokbalint. p. 428

FOLDTANI KOZLONY Vol. 88, no. 4, Oct./Dec. 1958

Monthly List of East European Accessions (EEAI), LC, Vol, 8, No. 5, May 1959, Unclass.

BALDI, Tamas

Paleoecology of the middle Miocene fauna of Szokolya. Foldt kozl (EKAI 9:8)
90 no.1:27-47 Ja/Mr '60.
(Hungary--Paleontology)

BOGSCH, Laszlo, dr.; BALDI, Tamas, dr.; FOLDVARI, Aladar, dr.; SCHRETER, Zoltan, dr.; MAJZON, Laszlo, dr.; VADASZ, Elemer, dr.

Remarks about Dr. Ilona Csepreghy nee Moznerics' article "The question of "chattien"-Aquitanian in the light of the history of science. Foldt kozl 42 no.2:196-202 Ap-Je '62.

1. "Foldtani Kozlony" felelos szerkesztoje (for Vadasz).
2. "Foldtani Kozlony" szerkeszto bizottsagi tagja (for Bogsch and Majzon).

BALDI, Tamas, dr.

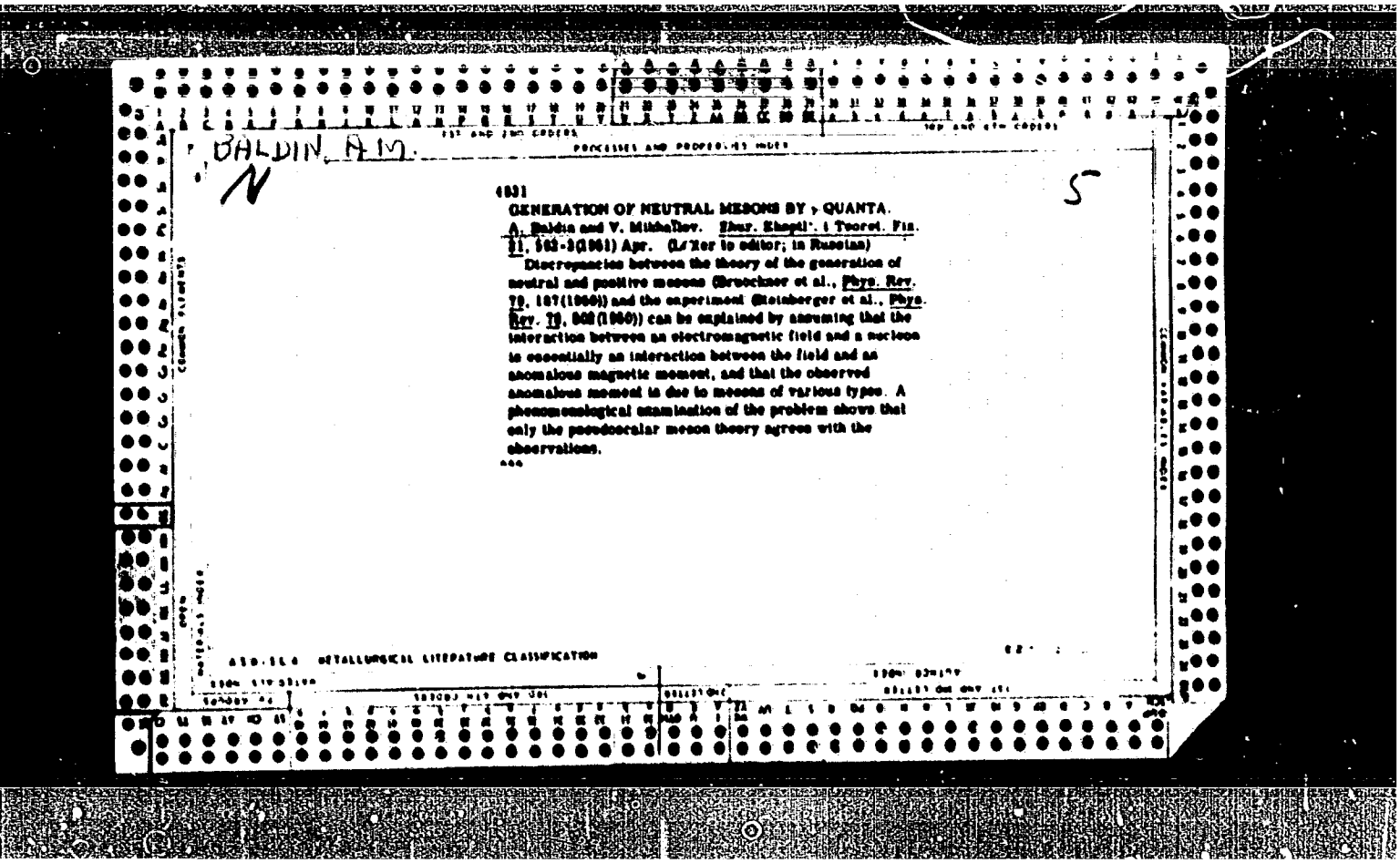
The age of the "Pectunculus sand" at Torokbalint and the border problem of the Oligocene-Miocene periods. Foldt Kozl 93 no.2: 204-216 Ap-Je '63.

DOBRESCU, C.; BALDIE, Al.

New varieties of oak in the central Moldavian plateau. Studii cerc biol veget 12 no.3:343-351 '60. (EEAI 10:5)
(Rumania--Oak)

CA BALDIN, A.M.

/ Formation of single mesons by γ-quanta. A. M. Baldin and V. V. Mikhailov. *Zhur. Eksptl. Teoret. Fiz.* 20, 1067-8(1950).—The differential effective cross sections for the formation of charged mesons by γ-quants on nucleons are calcd. for scalar, pseudoscalar, and vectorial meson fields, and the calcd. angular distributions of the mesons are represented in graphs. These distributions are different in the 3 theories. In the pseudoscalar variant, the no. of mesons in a direction opposite ($\theta = 180°$) to that of the impulse of the incident quanta is approx. 1/3 the max. no. corresponding to $\theta = 0°$. In the vectorial variant, that fraction is 1/20, and in the scalar variant there should be no mesons corresponding to $\theta = 0°$, $\theta = 180°$, and the max. of angular distribution should lie at about $\theta = 30°$. The effective cross section for the formation of scalar mesons is 1/3 that of the formation of pseudoscalar and 1/8 that of vectorial mesons. N. Thon



BALDIN A.M.

N

S

4831

GENERATION OF NEUTRAL MESONS BY γ QUANTA.
A. Baldin and V. Mikhailov. Zhur. Eksptl'. i Teoret. Fiz. 41, 583-3(1961) Apr. (Letter to editor; in Russian)

Discrepancies between the theory of the generation of neutral and positive mesons (Drucckner et al., Phys. Rev. 79, 167(1950)) and the experiment (Steinberger et al., Phys. Rev. 79, 908(1950)) can be explained by assuming that the interaction between an electromagnetic field and a nucleon is essentially an interaction between the field and an anomalous magnetic moment, and that the observed anomalous moment is due to mesons of various types. A phenomenological examination of the problem shows that only the pseudoscalar meson theory agrees with the observations.

***

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

BALDIN, A.M.

(2)

Formation of mesons by gamma-quanta. A. M. Baldin and V. V. Mikhailov. *Uspekhi Fiz. Nauk* 44, 2[illegible] (1951); cf. *C.A.* 45, 10084*f*.—The formation of mesons by γ-quanta is discussed from the standpoints of exptl. data and of theory. The material which is presented refers to an energy range for the γ-quanta $E_\gamma \sim 2mc^2$. This is the most important region for the study of the formation of π-mesons by γ-quanta. In this region the cross section for the formation of charged mesons has reached a max. A series of equations is presented for the scalar theory, the pseudoscalar theory, and the vector theory. J. Rovtar Leach

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Nuclear Phenomena

8-27-54
RMD

BARDIN, A. M. and MIKHAYLOV, V. V.

"The Formation of Single Mesons by Gamma Quanta", Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 20, No. 12, 1950.

Phys. Inst imeni Lebedev, Acad Sci USSR

A Digest W-17400, 21 Mar 1951

BALDIN, A.M.

USSR/Nuclear Physics - Photo Production 1 May 52

"Photo Production of π^0 Mesons on Deuterons," V. V. Mikhaylov, A. M. Baldin

"Dok Ak Nauk SSSR" Vol LXXIV, No 1, pp 47-49

Direct calcn of cross sections of photo production of neutral mesons on nucleons according to perturbation theory leads, even when higher orders are taken into account, to values of cross sections which are in sharp contrast with exptl results. Qual consideration of this process leads to necessity of phenomenological introduction of electromagnetic interaction of the nucleon which is connected with its structure (such as the size of meson cloud, etc.). In this connection it is of interest to compute cross sections of photo production of π^0 mesons on deuterons. Submitted by Acad D. V. Skobel'tsyn 6 Feb 52.

22k89

22k89

BALDIN, A. M.

7

(3)

1

ANGULAR DISTRIBUTION OF PHOTOMESONS GENERATED BY NUCLEI. A. M. Baldin and V. V. Nikitin (Physics Inst. im. P. N. Lebedev). Zhur. Eksptl'. Teoret. Fiz. 33, 481-5(1958) Oct. (In Russian)

T e angular distribution of photomesons generated by nuclei was calculated for scalar and pseudoscalar mesons. Reference is made to the theoretical investigation of the formation of charged mesons with γ quanta (M. Lax and H. Feshbach, Phys. Rev. 81, 189(1951)) in which an error was made. (tr-auth)

Nuclear Science Abstracts
July 15, 19 :
Physics

9-21-59

USSR.

PHOTOPRODUCTION OF MESONS IN THE THEORY OF RADIATION DAMPING. V. Mikhailov and A. Baldin. Zhur Eksptl. i Teoret. Fiz. 24, No. 5, 613-16(1953). (In Russian)

The usual perturbation theory predicts an approximately isotropic distribution of π^0 mesons in contradiction with experiment. Calculations are carried through here with a symmetrical pseudoscalar coupling $g^2 \hbar c = 1$, and yield results which are qualitatively in agreement with the experimental distribution without destroying the previous agreement for the production of π^+ mesons. (Science Abstracts)

USSR.

530 145

5101. On the two types of charge invariance. A. BALDIN AND V. MIKHAILOV. *Dokl. Akad. Nauk SSSR*, 91, No. 3, 479-82 (1953) *In Russian.* English translation, *U.S. National Sci. Found NSF-tr-101*

Discussing the [illegible] of π^0 [illegible]

which depends only on the [illegible] magnetic field with the nucleon charge, is invariant [illegible] Taking [illegible]

BALDIN, A.

USSR/Physics

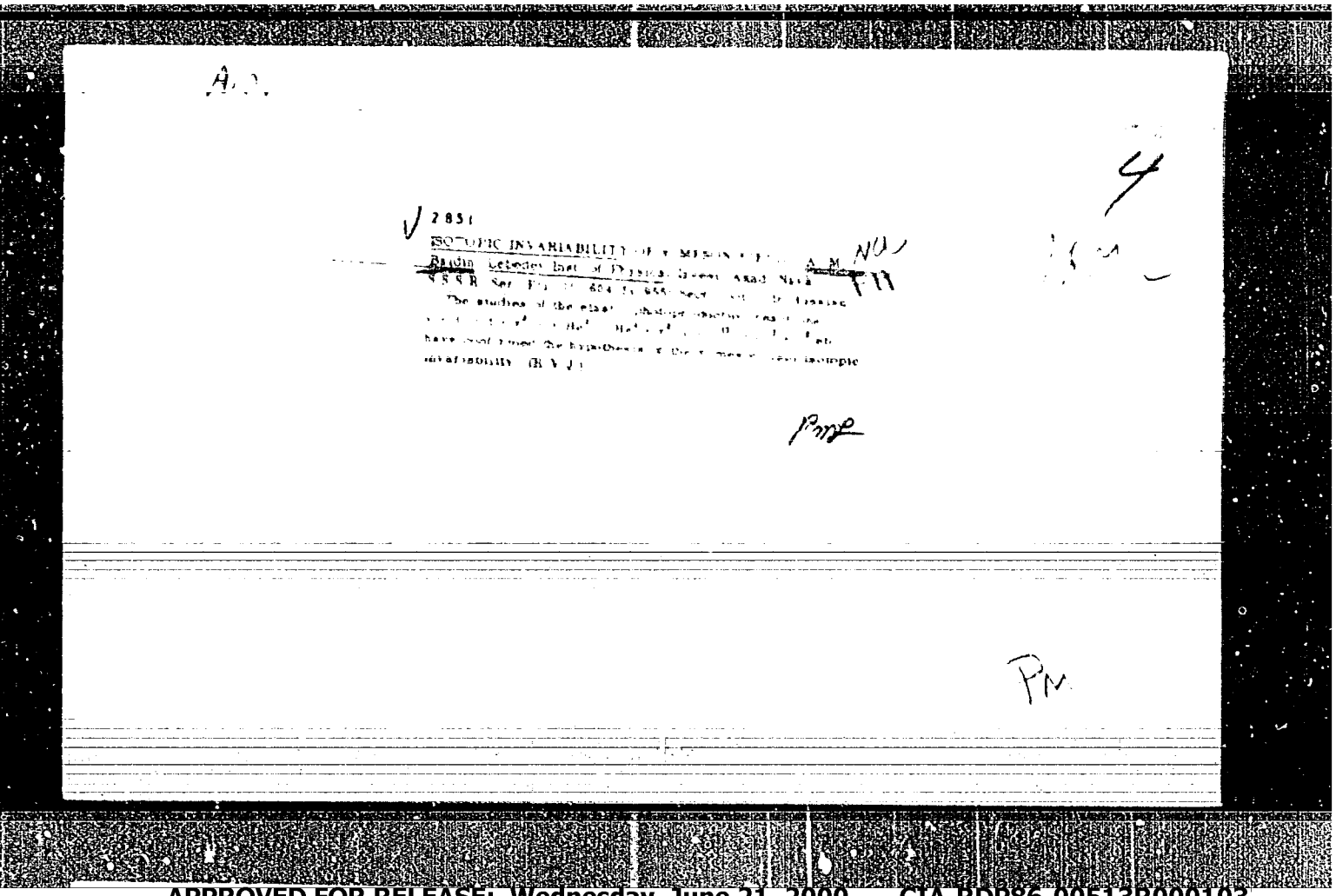
Card : 1/1

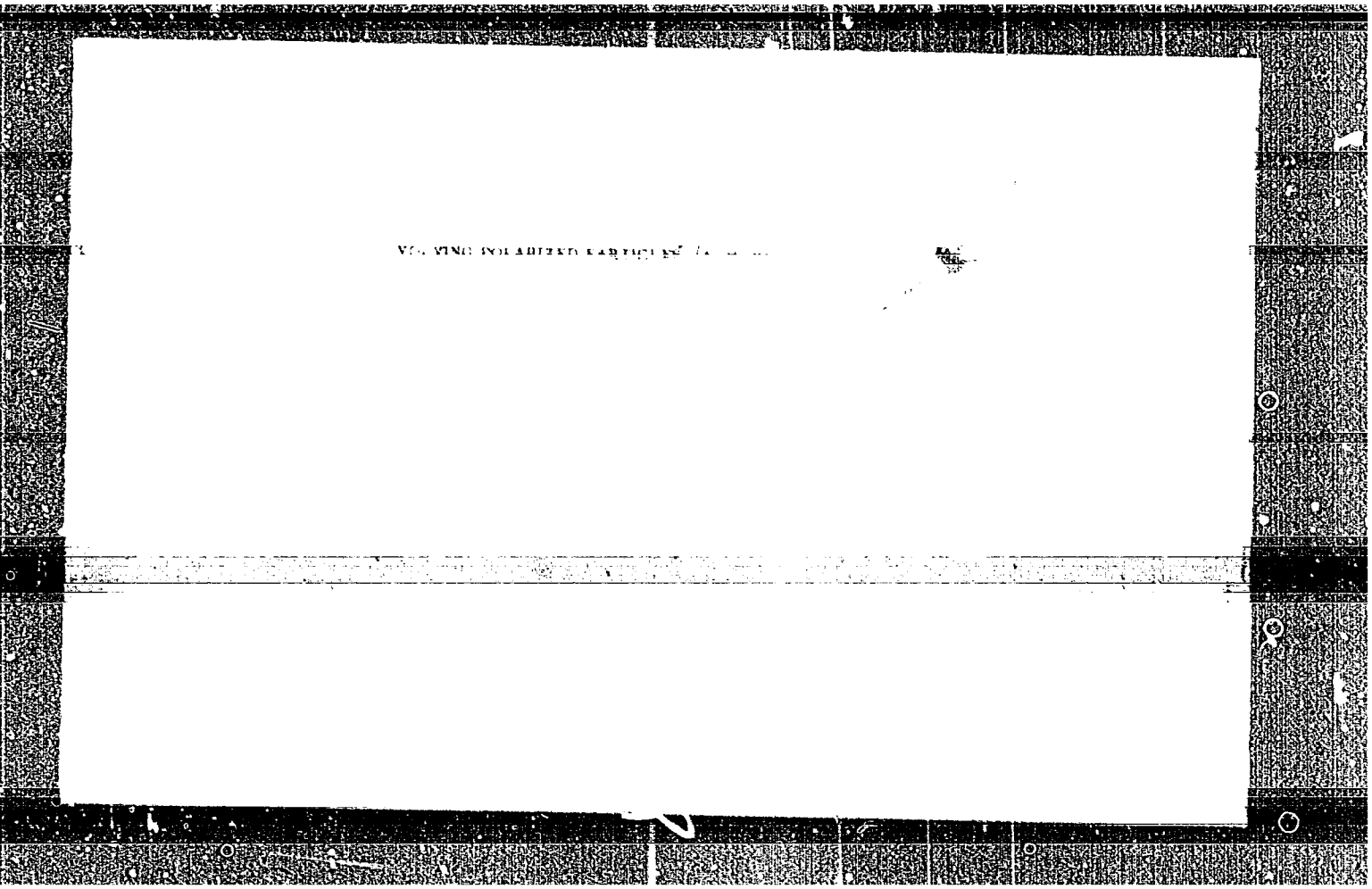
Authors : Baldin, A.

Title : Isotopic invariability of the π -meson field

Periodical : Dokl. AN SSSR, 96, Ed. 5, 949 - 952, June 1954

Abstract : The so-called isotopic invariance of the π-meson fields is discussed. It means that in such fields, all protons can be replaced by neutrons and all neutrons by protons, and all $(\pi^{\pm})$ mesons by all $(\pi^{\mp})$ mesons, and that the distribution of neutral mesons, π^{0} formed, over deuterons and their reactions with so-called "nucleons" are symmetrical with respect to the charges.





Baldin, A.M.

Category : USSR/Nuclear Physics - Nuclear Reactions C-5

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6008

Author : Baldin, A.M., Shirokov, M.I.
Inst : Physical Institute, Academy of Sciences, USSR
Title : Contribution to the Theory of Reactions with Polarized Particles

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 4, 784-785

Abstract : The tensor moments are obtained for the problem of the collision of two bodies in the most general case (where the initial and final spin states of the particles can be arbitrary). For the particular case considered by Simon (Referat Zhur Fizika, 1954, 12809; 1955, 2140), the equations of this work do not transform into Simon's equations. The discrepancy is due principally to the difference in the definition of the tensor moments; in addition, the formulas obtained do not contain the sign multiplier $(-1)^x$. The method proposed and used to derive the expressions for the tensor moments consists of a successive application of the theory of the Dirac transformations.

Card : 1/1

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1880
AUTHOR BALDIN,A.M., MICHAILOV,V.V., RABINOVIČ,M.S.
TITLE The "Osculation" method for Investigations of the Free Oscillations in Accelerators.
PERIODICAL Žurn.eksp.i teor.fis,31,fasc.6,992-1001 (1956)
Issued: 1 / 1957

By means of the osculation theory worked out here the influence exercised by the free oscillations on the injection process and the acceleration in cyclic accelerators of any type can be described from a uniform point of view. The free oscillations in any magnetic field $\vec{H}$ with a symmetry plane are studied. The lines of force are supposed to intersect a certain plane under a constant angle. From all possible orbits a closed one is separated, which is located on the aforementioned plane and is called "quilibrium orbit". The equation of free oscillations is $\varrho'' + q(\sigma) = 0, q(\sigma) = R_0^{-2}(\sigma)\left[1 - n(\sigma)\right]$. Here $n(\sigma)$ is the index of the magnetic field: $n(\sigma) = -(R_0(\sigma)/H(\sigma,0)).(\partial H(\sigma,\varrho)/\partial\varrho)_{\varrho=0}$. Here σ denotes the length along the equilibrium orbit and ϱ - the normal distance from this orbit. The solution of the aforementioned oscillation equation can also be written down in the following form: $\varrho(\sigma) = F(\sigma)\cos\left[\mu\sigma/L + \alpha(\sigma)\right]$, $F(\sigma) = |D\varphi(\sigma)|$; $\alpha(\sigma) = \arg(D\varphi(\sigma))$. $F(\sigma)$ and $\alpha(\sigma)$ are periodic functions with the period L. The free oscillations can thus always be represented as sine functions with the variable amplitude $F(\sigma)$, the phase $\alpha(\sigma)$ and with the frequency μ/L. In the theory of

Žurn.eksp.i teor.fis,31,fasc.6,992-1001 (1956) CARD 2 / 2 PA - 1880

accelerators two problems are investigated when examining the free oscillations: a) the collision of particles with the injector plates, b) collision of particles with the walls of the vacuum chamber. ϱ assumes practically any value of from $-F(\sigma)$ to $+F(\sigma)$ in the case of any azimuth. The curve $\varrho = F(\sigma)$ can be considered as a tangent of the orbit of the particle. The orbit of the particle is enclosed between the curves $\varrho = \pm F(\sigma)$ and, in the cases which are of interest in practice, it takes up the entire domain between the tangents after numerous cycles. The determination of the tangent is much more simple than the computation of the orbit of the particles. At the same time all principal problems of the theory of accelerators which are connected with free oscillations can be solved if the tangent is known. When solving the problem of a collision with the walls of the chamber it is necessary to examine the function $f(\sigma) = \Phi(\sigma)/\Phi(\sigma_1)$ which characterizes the ratio of the oscillation amplitudes at any azimuth and at the azimuth of the injector. These considerations are then specialized for an accelerator the magnets of which are out apart as well as for accelerators with strong focussing.

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

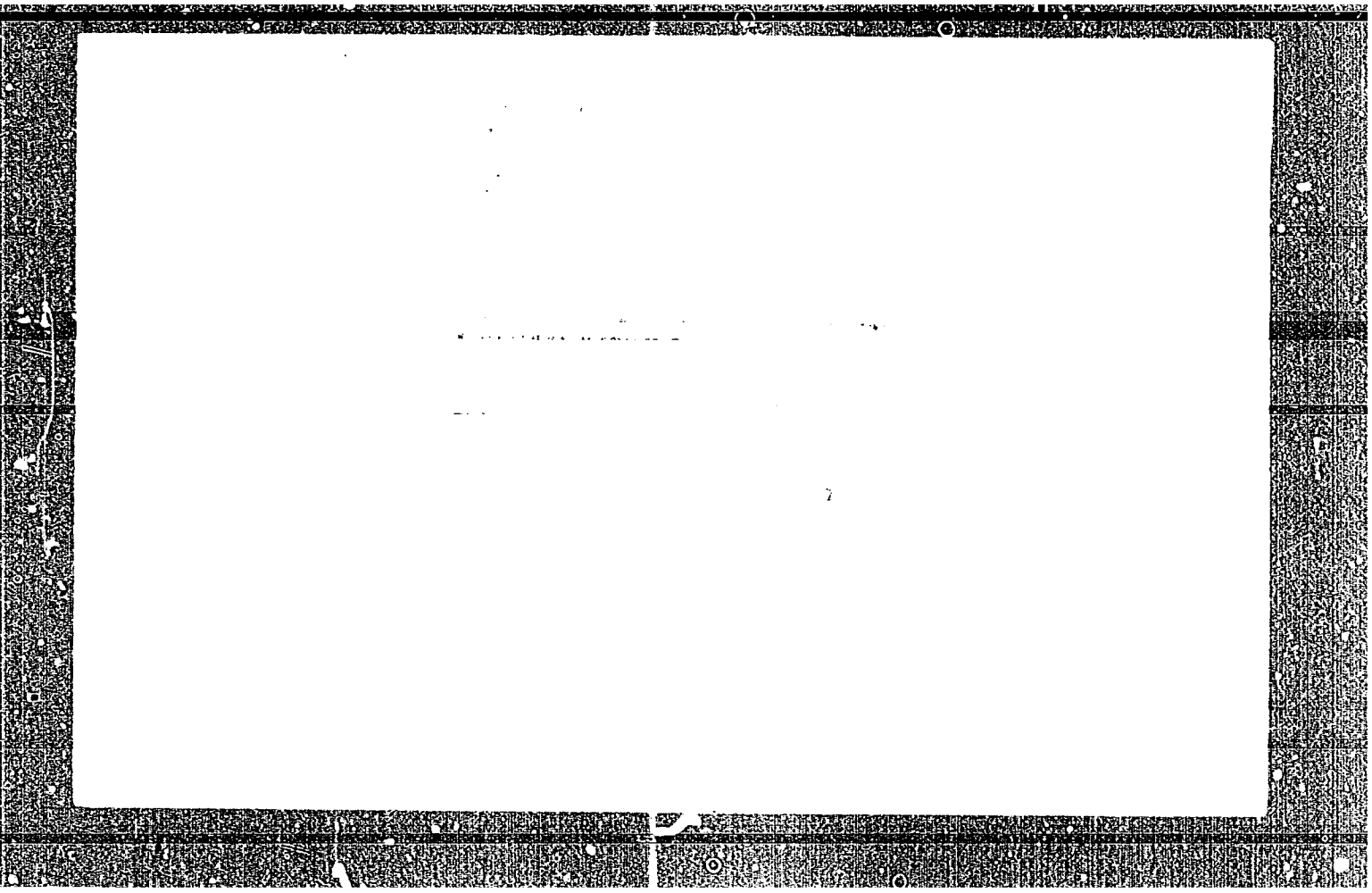
BALDIN, A.M.

"On the Theory of Photoproduction of Mesons on Bound Nucleons," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

BALDIN, A. M.

"Interaction of Protons with Polarized Nuclei,"
Lebedev Physics Inst, Acad. Sci. USSR

report submitted at the A-U Conf. on Nuclear Reactions in Medium and Low Energy Physics, Moscow, 19-27 Nov 57.



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R000103

AUTHOR BALDIN, A.M., PETRUN'KIN, V.A.

TITLE On the Scattering of Photons by Protons. 56-6-39/56
(O rasseyanii fotonov na protonakh -Russian)

PERIODICAL Zhurnal Eksperim.i Teoret.Fiziki, 1957, Vol 32, Nr 6, pp 1570-1572
(U.S.S.R.)

ABSTRACT The present paper supplies data concerning the structure of the S-matrix and the lowest number of the parameters necessary for the investigation of this scattering process. The authors deal with the problem in the following manner: They write down the S-matrix in such a representation in which its properties can be expressed in the easiest way, i.e. in the representation of the total angular momentum I and its projection M, the total isotopic spin T and its projection T_z, and the parity π. All these quantities are here referred to the center of mass system. The S-matrix is investigated on the energy surface. Only the following channels α are investigated: γ-quantum and proton (γ) as well as pion and nucleon (π). Taking account of the remaining channels exercises no essential influence upon the results. Particular interest must be directed towards the channel with production of electron-positron pairs. The matrix element of the S-matrix which describes the transition is by no means small. Actually, the formation of pairs leads to the so-called scattering on the nucleon field. However, this process has an angular distribution that is directioned sharply in a frontal direction. If the scattering angle of the order $m_e c^2/E_\gamma$ need not be taken into

Card 1/2

On the Scattering of Photons by Protons. 56-6-39/56

account.This effect may be disregarded.When solving the system of equations corresponding to this problem the following is presupposed: 1) A long-wave approximation is used, i.e. only the interaction of dipole-like quanta (electric and magnetic) with the proton is studied. 2) For the moduli of the matrix elements connecting the various channels with one another a certain relation is presupposed. The system of equations can be solved by successive approximation. The thus obtained expressions for the matrix elements are explicitly given.However, for the determination of the parameters further data are required, which can be determined from experiments with polarized particles.In conclusion the domain of low energies is investigated,where the cross section differs only little from that determined by Thomson's formula.
(No illustration).

ASSOCIATION Not Given.
PRESENTED BY
SUBMITTED 17.1.1957
AVAILABLE Library of Congress.
Card 2/2

AUTHOR: Baldin, A.M., Lebedev, A.I. 56-5-23/46

TITLE: The Interaction of Slow π-Mesons With Nuclei (Vzaimodeystviye medlennykh π-mezonov s yadrami)

PERIODICAL: Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol. 33, Nr 5, pp. 1221-1226 (USSR)

ABSTRACT: The influence exercised by the interaction effect of charged mesons with nuclei on the meson-forming cross section is investigated for the case in which the wave length of the meson exceeds the measurements of the nucleus. Between the cross section for photo-forming of the meson, the displacement and width of mesoatomic levels, a connection could be shown theoretically.
From the theoretical deliberations stated it follows that the mechanism of the reabsorption of the mesons cannot explain the dependence of the photo-forming cross section on the atomic number. Further, yet another mechanism must be assumed which forbids the forming of mesons within the nucleus.
The finite order of a nucleus exercises an important effect upon photo-forming of slow mesons, because it changes the effect of

56-5-23/46

The Interaction of Slow π-Mesons With Nuclei

Coulomb's field considerably. There are 1 figure and 13 references, 3 of which are Slavic.

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

SUBMITTED: May 4, 1957

AVAILABLE: Library of Congress

Card 2/2

BALDIN, A. M.
P. N. Lebedev Physical Institute, USSR Acad. Sci., Moscow.

"Electric Polarizability of Atomic Nuclei." Nuclear Physics, v. 9., No. 2, December 1958, p. 237-241. North-Holland Publishing Co., Amsterdam.

Abstract: A quantitiative estimate is given of the effects depending on the existenc of a tensor (spin-dependent) part in the electric polarizability of nuclei.

2(7) PHASE I BOOK EXPLOITATION SOV/3108

Baldin, Aleksandr Mikhaylovich, Vitaliy Iosifovich Gol'danskiy, and Iosif Leonidovich Rozental'

Kinematika yadernykh reaktsiy (Kinematics of Nuclear Reactions) Moscow, Fizmatgiz, 1959. 296 p. 8,000 copies printed.

Ed.: Ye. Ye. Zhabotinskiy; Tech. Ed.: S. S. Gavrilov.

PURPOSE: This book is intended for physicists exploring the atomic nucleus and elementary particles.

COVERAGE: The book consists of two parts. The first part describes characteristics of motion with relativistic velocities giving relativistic transformations and utilizing two main coordinate systems. It also describes the classical kinematics of interactions producing two or more particles, as well as cases of nonrelativistic interactions and conversions with the participation of photons. The second part analyzes the scattering matrix and on the basis of the latter and the Dirac theory introduces Clebsch-Gordan, Racah, Z, and X coefficients in vector addition. It also analyzes the emergence of polarized particles in nuclear reactions and the regularities of this emergence. In general the book describes one of the chief methods of processing experimental data in modern nuclear physics and

Card 1/5

Kinematics of Nuclear Reactions SOV/3108

systematizes the data on the kinematics of nuclear reactions. V. A. Petrun'kin and A. I. Lebedev are responsible for the material in appendix II. The authors thank V. B. Berestetskiy and G. N. Kopylov for their constructive criticism. There are 73 references: 33 Soviet, 35 English, 3 Italian, and 2 German.

TABLE OF CONTENTS:

Card 2/5

AVAILABLE: Library of Congress

Card 5/5

TM/sfm
2-10-60

21 (1).

AUTHOR: Baldin, A. M. 807/56-37-1-32/64

TITLE: Optical Anisotropy of Atomic Nuclei (Opticheskaya anizotropiya atomnykh yader)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 1(7), pp 202 - 211 (USSR)

ABSTRACT: In the present paper, the terms of molecular optics are generalized to photonuclear reactions. The author gives a consequent formulation of the theory of electric dipole polarizability of atomic nuclei, and he discusses the experiments by means of which data on the tensor part of electric polarizability might be obtained. The amounts of the effects are estimated by means of two different nuclear models - the model of independent particles, and the collective model. The theory of electric polarizability of atomic nuclei can be set up in analogy to the theory of polarizability of molecules. Many methods of molecular optics can be applied to photonuclear reactions. The object of the present paper is not an extensive generalization of the theory of interaction of the light with the molecules to the interactions of the γ-quanta with the nuclei, but the author only investigates the elastic scattering of γ-quanta on nuclei

Card 1/4

and photonuclear reactions (the total cross section of the absorption of dipole-like γ-quanta with a nucleus). Electric dipole absorption is known to play the principle part in the interaction of γ-quanta with the nuclei in the range of energies of up to ~20 Mev. This is why the author restricts himself to this part of interaction. The scattering amplitude may depend on the spin of the system, i.e. the reduced dipole moment of the nucleus can depend on the orientation of the nucleus with respect to the electric field. The dependence of the cross section of the elastic scattering of γ-quanta on the nuclei upon the parameter R^T introduced here, or upon the tensorial polarizability proportional to it, is then determined. The existence of a tensorial polarizability can influence the amount of the total cross section of elastic scattering, as well as the angular distribution of the scattering (existence of a large isotropic part in the angular distribution). According to the considerations in this part, there is a large number of effects upon which tensor polarizability could exert some influence, and which can be fully observed by the experimental means available at present. The next part deals with the model of tensor

polarizability. In analogy to molecular optics, the term of "internal" tensor polarizability is introduced, i.e. of the polarizability in the coordinate system moved together with the nucleus. Under very general assumptions, the same result is obtained by the use of different nuclear models. Subsequently, there are some conclusions: The existence of a tensor polarizability of atomic nuclei can hardly be doubted any longer. In any case, such tensor polarizability exists in the deuterium nucleus. The essential difference of the tensor of the polarizability of atomic nuclei as against the tensor of the polarizability of molecules is that the former is non-hermitian. Another particularity of the theory of polarizability of nuclei lies in the investigation of effects which correspond to the experimental methods of nuclear physics. The investigation of tensor polarizability will, in any case, deliver more accurate and complete data on the shape of the nuclei than the other methods applied at present. There are 9 references, 3 of which are Soviet.

Optical Anisotropy of Atomic Nuclei SOV/56-37-1-32/64

ASSOCIATION: Fizicheskiy 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 4/4

21(1) SOV/20-127-5-16/58

AUTHORS: Baldin, A. M., Govorkov, B. B.

TITLE: Checking of the Dispersion Relations for the Photoproduction of π-Mesons

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 5, pp 993-996 (USSR)

ABSTRACT: The authors speak about an incongruence of experimental data, which they found in connection with the photoproduction of π_0-mesons from $\gamma + p \rightarrow p + \pi^0$ (1) and mention the conclusions they drew on the basis of the dispersion relations for the process. They confine themselves to the energy range $q \leq 1$ (q = momentum of the meson, $\hbar = c = 1$), in which the long-wave approximation is well applicable. On the assumption that the s- and the p-wave play the main part in this process, the angular distribution is written down for (1):
$\frac{d\sigma}{d\Omega} = A + B\cos\theta + C\cos^2\theta$ (2). The parameter A contains the amplitude squares of the s- and p-wave, B their interference, C the amplitude squares of the p-wave. Figure 1 gives the experimental data (Ref 1) for (1). From the graphical represen-

Card 1/3

Checking of the Dispersion Relations for the Photoproduction of π-Mesons

tation the effective values for $A^{(0)}$, $A^{(2)}$, $B^{(1)}$, and $C^{(2)}$ are calculated. For the π-photoproduction of π^0-mesons on the neutron near threshold the following is found: $\sqrt{A^{(0)}} = (0.04 \pm 0.04).10^{-2}$, which is smaller by one order of magnitude than the amplitude for the photoproduction of π^0-mesons on hydrogen. On the assumption that no quadrupole absorption occurs, the amplitudes M_{1-} and M_{1+} of the magnetic transitions are calculated. The experimental data of the reaction (1) are described with sufficient accuracy if it is assumed that among the amplitudes of the p-wave different from zero there are such as describe magnetic transition by the state of a total moment 3/2. In the following, the paper by G. Chew, M. Goldberger, F. Low, Y. Nambu (Ref 2) is criticized. The dispersion relations deduced by the authors mentioned are based on the assumption of a rapid decrease of all amplitudes of the photoproduction at $W \to \infty$, as well as of certain assumptions for this calculation. The numerical values resulting therefrom deviate considerably from experimental data. The authors state that the main cause of these deviations is the assumption of the rapid decrease of the amplitudes at $W \to \infty$. There are 1 figure and 4 references,

Card 2/3

SOV/20-127-5-16/58

Checking of the Dispersion Relations for the Photoproduction of π-Mesons

1 of which is Soviet.

PRESENTED: May 15, 1959 by I. Ye. Tamm, Academician

SUBMITTED: April 24, 1959

Card 3/3

SALDIN, Aleksandr M.

"Relativistic Dispersion Approach to Pion Photoproduction Near Threshold"

paper presented at the Intl Conference on High Energy Physics, Rochester, N. Y. and/or Berkly California, 25 Aug - 16 Sep 1960.

Lebedev Institute of Physics, Moscow, USSR

BALDIN, Aleksandr M.

"Investigation of Pion Photoproduction Close to Threshold on Basis of Relativistic Dispersion Relations"

paper presented at the Intl Conference on High Energy Physics, Rochester, N. Y. and/or Berkly California, 25 Aug - 16 Sep 1960.

Lebedev Institute of Physics, Moscow, USSR

BALDIN, A. M., Dr. Phys-Math Sci - (diss) "Photo-Origin of Pi-Mesons in the Near-threshold Region," Dubna, 1960, 18 pp, 120 copies (Physics Institute im P. N. Lebedev, AS USSR) (KL, 47/60, 96)

BALDIN, A.M.

Analysing the data on π-meson photoproduction in the near threshold region based on dispersion relationships. Zhur.eksp.i teor.fiz. 38 no.2:579-587 F '60. (MIRA 14:5)

1. Fizicheskiy institut im. P.N.Lebedeva Akademii nauk SSSR.
(Mesons)

BALDIN, A.M.; SEMENKO, S.F.

Theory of the optical anisotropy of atomic nuclei. Zhur. eksp. i teor. fiz. 39 no.2:434-437 Ag '60. (MIRA 13:9)

1. Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR.
(Nuclei, Atomic--Optical properties)

BALDIN, A.M.

Role of the nonphysical region in dispersion relations for the photogeneration of π-mesons. Zhur. eksp. i teor. fiz. 39 no.4: 1151-1153 O '60. (MIRA 13:11)

1. Fizicheskiy institut imeni P.N.Lebedeva Akademii nauk SSSR.
(Mesons)

BALDIN, A.M.; NGUYEN-VAN-K'YEU [Nguen-Van -h'eu]

[One possibility for determining the magnetic moments of unstable vector particles] Ob odnoi vozmozhnosti opredeleniia magnitnykh momentov vektornykh nestabil'nykh chastits. Dubna, Ob"edinennyi in-t iadernykh issl., 1961. 6 p. (MIRA 15:1)
(Mesons) (Dipole moments)