

~~BILEK, K.~~

Geology of the Lower and Middle Miocene in the eastern part of the Vienna basin.

P. 43 (Prague. Ustav pro naftovy vyskum. Prabe, No. 23/25, 1956, Praha , Czechoslovakia)

BILEK, Kamil, RNDr., promovany geolog

Macrofauna of the Lower Burdigalian from the Chropkov area. Geol  
pruzkum 5 no.9:274-276 S '63.

1. Ceskoslovenske naftove doly, n.p., Hodonin, Pruzkumne tezebny  
savod ve Gbelech.

BILEK, Karoly

Modernization of the forging shop of the Lenin Metallurgical  
Works (Diosgyor). Koh lap 95 no.5:215-218 My '62.

BILEK, M.

FILE, R.

Machinery of the food industry at the 2d Czechoslovak Machinery Exhibition in Brno. p. 324. PRUMYSL POTRAVIN. (Ministerstvo potravinarskeho prumyslu) Praha. Vol. 7, no. 7, 1956.

SOURCE: East European Accessions List, (EEAL), Library of Congress, Vol. 8, no. 12, December 1956.

BILEK, Milan

How shall we use trailers? Siln doprava 13 mc.1:4-5 Ja '65.

*BILK, M.*

BILK, M.; SWIECHOWSKA, W.

Determination of distribution of types of typhoid bacilli by means of bacteriophage. Med.dow.mikrob. 2 no.1:121-125.1950.(GML 20:5)

1. Of the National Institute of Hygiene Branch in Krakow.

BILEK, M.

Paratyphoid B (Schottmuller) in a college dormitory in Krakow. Med.  
dosw.mikrob. 2 no.2:211-213 1950. (CJML 20:6)

1. Summary of the report given at 10th Congress of the Polish Mi-  
crobiological and Epidemiological Society held in Gdansk, Sept.  
1949 (Krakow.)

BILEK, M.

Strains of typhoid bacilli in epidemics in the Infant's Home in Krakow. Med.dosw.Mikrob. 2 no.2:266-268 1950. (CJML 20:6)

1. Summary of the report given at 10th Congress of the Polish Microbiological and Epidemiological Society held in Gdanak, Sept.1949. (Krakow.)



*BILEK, M.*

BILEK, M.; SWIECHOWSKA, W.

Expansion of strains of *Eberthella typhosa* determined with bacteriophage. *Med.dow.Mikrob.* 2 no.2:268-272 1950. (CIAM 20:6)

1. Summary of the report given at 10th Congress of the Polish Microbiological and Epidemiological Society held in Gdansk, Sept. 1949. (Krakow.)

BILEK M.

BILEK M.

W sprawie techniki badania na nosicielstwo pałeczek duru brzusznego i paratypu. /Technique in determination of typhoid-paratyphoid carriers/ Med. dow. mikrob. 2:3-4 1950. p. 402-6.

1. Of the National Institute of Hygiene in Krakow.  
GIML Vol. 20, No. 10 Oct 1951

BILK, M.

Mixers for quantitative determination of blood picture. Polski tygod.  
lek. 8 no.5:183-185 2 Feb 1953. (CIML 24:5)

1. M.D. 2. Krakow.

BILK, M., Dr

Tasks of regional sanitary-epidemiological center in connection  
with the tasks of the state sanitary inspection. Zdrowie pub.,  
Warsz. no.2:113-117 Mar-Apr 55.

(PUBLIC HEALTH,

in Poland, regional sanitary-epidemiol. service & state  
inspection)

~~WYKONCZAJĄC~~ BILEK, M.  
BILEK, Mieczysław; FORYS, Stanisław; KALCZYŃSKI, Jerzy; LECZYCKA, Maria;  
MAŁSKI, Leszek; SWIŃCHOWSKA, Walentyna

Preventive vaccination against influenza in Krakow during 1954-55. Przegl. epidem., Warsz. 10 no.2:121-126 1956.

1. Z Wojewódzkiej Stacji Sanitarno-Epidemiologicznej w Krakowie.  
(INFLUENZA, prevention and control,  
vacc. in Poland (Pol))

EXCERPTA MEDICA Sec 17 Vol 5/2 Public Health Feb 59

441. AN ATTEMPT TO RECONSTRUCT THE COURSE OF AN EPIDEMIC OF TYPHUS FEVER AFTER A 10-YEAR PERIOD - Próba odtworzenia przebiegu zachorowań w dawnym ognisku epidemicznym duru wysypkowego - Bilek M., Lutyński R. and Raginis Z. Wojewódzk. Stacji San.-Epidemiol., Kraków - PRZEGL. EPIDEM. 1958, 12/2 (165-170) Tables 2

An attempt to depict the course of a typhus epidemic was made on the basis of questionnaires and serological investigations (CFT). The epidemic in question occurred during the winter of 1944/45 in a mountain village. As a result of the present investigation, it was established that in 1944/45 about 40% of the village population was ill with typhus fever. After a period of about 10 yr., 60.5% of them showed a positive CFT with Rickettsia-antigen at 1:10-1:40; in younger persons an even higher antibody level was found. Some people in their teens or younger in 1944/45 were infected, but probably showed no clinical symptoms.

BILEK, Mieczyslaw; SCHMIDT, Jadwiga

On infection and preventive management from epidemiologist  
standpoint. Prsegl. epidem., Warsz. 13 no.3:241-246 1959  
(TYPHOID, prev. & control)

BILEK, Mieczyslaw; KOENIG, Irena; LUTYNSKI, Roman

The persistence of poliomyelitis virus type 1 in vaccinated individuals and in their environment. Przegl. epidemiol. 19 no.1s97-100 '65

1. Z Wojewodskiej Stacji Sanitarno-Epidemiologicznej w Krakowie (Dyrektor: doc. dr. M. Bilek).



BILEK, Mieczyslaw

The level of anti-influenza antibodies in the population of  
Krakow. Przegl. epidem. 15 no.1:27-31 '61.

1. Z Wojewodskiej Stacji Sanitarno-Epidemiologicznej w Krakowie.  
(INFLUENZA immunol)

L 01901-67 T JK

ACC NR: AP6035174

(A)

SOURCE CODE: FO/0081/65/019/002/0256/0256

BILEK, M., and GIZICKI, Z.; Regional Sanitation and Epidemiology Station (Wojewodzka Stacja San.-Epid.), Krakow and District Sanitation and Epidemiology Station (Powiatowa Stacja San.-Epid.), Zywiec.

"Peculiarities of the Epidemic of Typhoid Fever in the Zywiec Area in 1963."

23  
B

Warsaw, Przegląd Epidemiologiczny, Vol 19, No 2, 1965; p 256.

Abstract: Severe epidemic from mid-February to the beginning of June 1963; the epidemic centered in a large apartment house where out of 806 inhabitants, 124 were ill and 88 definitely diagnosed as having typhoid fever; from 79 of the latter *S. typhi* phage type E<sub>1</sub>b was isolated; 31 carriers of the same phage type organism were detected and treated with chloramphenicol but 5 of the supposed carriers fell ill during the period of hospitalization; eventually the carrier state could be cured in all but one of the 31. The epidemic was apparently transmitted through the drinking water. Presented at the 3rd Scientific Assembly of Polish Epidemiologists and Infectologists, 5-6 Oct 64. [JPRS]

TOPIC TAGS: epidemiology, digestive system disease, sanitation, bacterial disease

SUB CODE: 06 / SUBM DATE: none

Card 1/1 hs

0421 1370

"APPROVED FOR RELEASE: 06/08/2000

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**APPROVED FOR RELEASE: 06/08/2000**

**CIA-RDP86-00513R000205310015-4"**

DILEK, O.

NAHUNEK, K., Dr; BRUCKNEROVA, O., Dr; RODOVA, A., Dr; BILEK, O., Dr

Case of agranulocytosis (following barbiturates) as a complication of prolonged sleep therapy. Lek. listy, Brno 9 no.17:385-388  
1 Sept 54.

1. Z psychiatrické kliniky, predn. prof. Dr. Ed. Lauterer: Z III. vnitřní kliniky, predn. prof. Dr. Jar. Pojer. Z Ústavu pro všeob. a experimentální patologii, predn. prof. Dr. V. Uher.

(AGRANULOCYTOSIS, etiology and pathogenesis, barbiturates, in sleep ther.)

(BARBITURATES, poisoning, agranulocytosis, in prolonged sleep ther.)

(POISONING, barbiturate agranulocytosis in prolonged sleep ther.)

(SLEEP, therapeutic use, barbiturates causing agranulocytosis in)

CZECHOSLOVAKIA/Human and Animal Physiology - Blood.

T-4

Abs Jour : Ref Zhur - Biol., No 7, 1958, 31594

caused by non-specific stimulation, as is the change of  
quantity of leukocytes .

Card 2/2

BILEK, Otakar

Proliferation of the reticulohistiocytic system in rats after the administration of trypan blue. Scr. med. fac. med. Brunensis 34 no.5: 169-182 '61.

1. Z katedry patologické fyziologie lek. fakulty university J. E. Purkyne v Brne Vedouci: doc. MUDr. Jaromir Vasku.

(RETICULOENDOTHELIAL SYSTEM pharmacol)  
(AZO COMPOUNDS pharmacol)

BILEK, Otakar

Changes in the reactivity of the reticulohistiocytary system in rats after elimination of the optic analyzer. Scr. med. fac. med. Brunen. 34 no.7/8:323-331 '61.

1. Katedra patologické fyziologie lékařské fakulty university J. E. Purkyne, Brno Vedoucí: doc. MUDr. Jaromír Vasku.  
(RETICULOENDOTHELIAL SYSTEM physiol) (EYE physiol) (VISION)



PROCESSED AND PREPARED BY INDEX

*BILK, P.*

*10*

**Gravimetric determination of tellurium in a basic solution.** P. Bilk. *Collection Czechoslov. Chem. Commun.* 10, 437-442(1975). Vanadyl sulfate will reduce a soln. of tellurite in the presence of 10% NaOH to Te but the wt. of ppt., washed with MeOH and dried at 95°, is invariably low. Better results are obtained by the combined action of vanadyl salt and either HCO<sub>2</sub>Na or NH<sub>4</sub>OH.HCl. In this case, the Te is reduced to H<sub>2</sub>Te and oxidized to Te by stirring in air. This method is successful in the presence of selenate, but selenite salts of Pb, Cu, Bi, Sn or Sb interfere. Bibliography of 16 titles. W. I. H.

E2

ADD. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

LEADBO

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

*BILEK, PRAVOSLAV*

Czechoslovakia/Fitting Out of Laboratories - Instruments, Their Theory, Construction, and Use, H

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62024

Author: Spurny, Kvetostoslav; Bilek, Pravoslav; Simova, Helena; Nausova, Jana

Institution: None

Title: Verification and Improvement of Gravimetric Method for Determination of Dust Content

Original

Periodical: Prezkouseni a doplneni vazkove metody na stanoveni prasnosti, Pracovni lekar., 1954, 6, No 2, 88-93; Czech; Russian and English resumés

Abstract: It is shown that as filter can be used cotton and glass wool, the former having better filtering characteristics but being less sterile since it contains more extraneous particles. The latter retains less well the entrapped particles and is therefore more convenient for determination of average size of dust particles, distribution of particles by size, etc.

Card 1/1

CZECH

Determination of aerosols and vapors of beryllium and its compounds in the atmosphere. Kytický Spurný and Právošlav Bilek (HRS ÚJV, Prague, Czech). *Pracovní listy ÚJV, 1965*. Three colorimetric methods were checked and the results compared. The interfering influence of Fe, Al, Zn, Ni, Cu, Mn, Co, Zr, Cd, Pb, Mg, and Ca was substantially reduced by the di-Na salt of ethylenediaminetetraacetic acid. Methods of collecting samples of air by means of impingers and their solvation are described. L. J. Urbánek

183/211

WOLF, Evzen; SVAB, Ludvik; ~~BILEK, Stanislav~~

Adaptation and its disorders in neuroses. Cas. lek. cesk.  
46 no.10:299-302 8 Mar 57.

1. Psychiatricka klinika v Praze, prednosta prof. MUDr.

Zd. Myslivecek. E. W., Praha 2, Ke Karlovu 11.

(ADAPTATION, in var. dis.

neurosis (Cz))

(NEUROSES, compl.

adaptation disord. (Cz))

VOJTA, Evzen, BILBEK, Stanislav (Praga-CSR)

Certain basic concepts in psychiatry. Postepy neur.neurochir. 4:171-182  
1958

(PSYCHOLOGICAL THEORY,  
Freud's concepts, review (Pol))  
(PSYCHIATRY,  
ideol. aspects, review (Pol))

TOMIS, F.; BILEK, S.

"Thermic and high-frequency welding of plastics" by Hans P.Zade.  
Reviewed by F.Tomis and S.Bilek. Chem prum 12 no.2:96 F '62.

1. Vyzkumny ustav gumarenske a plasticke techniky (for Tomis).
2. Patra, n.p., (for Bilek).

CZECHOSLOVAKIA / Chemical Technology, Chemical Products and Their Application. Chemical Processing of Solid Fossil Fuels. H-22

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 16861

Author : Bilek, V.

Inst : Not given

Title : Rational Conditions for the Combustion of Solid Fuels

Orig Pub : Kvasny prumysl, 1958, 4, No 6, 128-130

Abstract : Briefly reviewed are theoretical basic considerations pertaining to the combustion of solid fuels and also technical conditions of their rational combustion in the steam boilers of the acid manufacturing plants.

Card 1/1

H-79

BILEK, V.; JANDA; F.

Aims and problems of the medical faculty of hygiene at Charles University.  
Cesk. hyg. 7 no.7:385-394 Ag '62.

1. Lekarska fakulta hygienicka University Karlovy v Praze.  
(HYGIENE education)



"APPROVED FOR RELEASE: 06/08/2000

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CIA-RDP86-00513R000205310015-4"

BILEK, Vatslav, inshener; BLATTNYI, Estipor, inshener, doktor; BROZHEK, Karl, inshener; DOGNAL, Lyudvig; GLAVACHEK, Frantisek; IGOTSKIY, Alois, inshener, doktor; MAKHAT, Frantisek; NAZAL, Yaroslav; OSVAL'D, Vladimir, inshener; RUZHICHKA, Moymir, inshner; SALACH, Vatslav, inshener, doktor; TRKAN, Miroslav, inshener; ZHILA, Vladimir; SHKOP, Ya., inshener [translator]; MEDINTSEV, M., inshener, [translator]; MASLOVA, Ye.F., redaktor; GOTLIB, E.M., tekhnicheskii redaktor.

[Technology of malt and beer] Tekhologiya soloda i piva. Avtorakii kollektiv Vatslav Bilek i dr. Avtoriz. perevod s cheshskogo IA, Shkopa i M. Medintseva, Moskva, Pishchepromisdat. Vol. 1. [Malt production] Proizvodstvo soloda. Translated from the Czech. 1957. 285 p. (MLRA 10:6)

(Malt)

BILEK, V.

Losses in the process of beer brewing. (To be contd.) p. 52. (Kvasny Prumysl, Vol. 3, No. 3, Mar 1957, Praha, Czechoslovakia)

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

BILEK VACLAV

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their I-12  
Application. Fermentation Industry.

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2853

Author : Bilek Vaclav

Inst :

Title : Losses in the Manufacture of Beer

Orig Pub : Kvasny prumysl, 1957, 3, No 5, 103-106

Abstract : A discussion of the various procedures for determining the volumetric losses in the course of beer manufacture: from cooling of the wort up to the filling of containers in which the beer is shipped. It is noted that different results are obtained depending on the procedure used. By a mathematical analysis, it is shown that more accurate results can be obtained on determination of losses of the extract (extractability of the malt and concentration of the finished beer, and also on the basis of the expenditure norm of standard malt per 1 hectoliter of beer). First part see RZhKhim, 1957, 56312.

Card 1/1

*BILEK, VACLAV*

CZECHOSLOVAKIA/Chemical Technology, Chemical Products and Their H-27  
Application, Part 3. - Fermentation Industry.

Abs Jour : Ref Zhur - Khimiya, No 14, 1958, 48403

Author : Vaclav Bilek

Inst : -

Title : Importance of Beer Analysis for Production Control

Orig Pub : Kvasny prumysl, 1957, 3, No 10, 218-219

Abstract : It is shown that the Balling formula and its later modifications can be applied taking into consideration the divergences of 0.1% by weight between the strength magnitudes of the initial wort found analytically (before yeast addition) and computed using the formulas.

Card 1/1

HILEK, V.

"Improving the economic efficiency of steam boilers." P. 61.

KVASNY PRUMYSL. (Ministerstvo potravinarskeho prumyslu). Praha,  
Czechoslovakia, Vol. 5 No. 3, Mar. 1959.

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

BILEK, V.

Lenses for projection of narrow films and films of normal width. Jemna mech opt 5 no.8:263-264 Ag '60.

S/081/62/000/004/077/087  
B138/B110

AUTHOR: Bílek, Vladimír

TITLE: Compressive strength of plastic glasses on the basis of polyester resins

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 559, abstract 4P50 (Kaučuk a plast. hmoty, no. 12, 1960, 444-446)

TEXT: Investigation has been made of the compressive strength of glass textolite on the basis of the polyester resin Veropal 004 and of glass cloth type Yrma 1 and 7, from which the oiling agent had been removed in trichlorethylene. From sheets of glass textolite produced by the contact method and containing 45-50 % reinforcing filler, parallel layers of specimens of various sizes were prepared and tested for compressive strength. The sizes were: 6 x 15 x 25, 10 x 10 x 10, 10 x 10 x 20, 10 x 10 x 30, 20 x 20 x 20, 20 x 20 x 40, 20 x 20 x 60, 30 x 30 x 30, 30 x 30 x 60 and 30 x 30 x 90 mm. Compressive strength was found to fall as the size of the specimen rose. Optimum dimensions for specimens tested for compressive strength were: base 10 x 10, height 20 mm. The scatter

Card 1/2



BILEK, V.

Selection of diffusion ring for calculating the depth of field of a photographic lens. Jemna mech opt 7 no.4:110-113 Ap '62.

1. Meopta, n.p., Píserov.

BILEK, Vladimir, inz.

International conference on plastics in the building industry.  
Poz stavby 12 no.5:219-220 '64.

BILEK, V., inz.

Thermal insulation of outside walls and roof coverings  
of buildings. Stavivo 42 no. 3:84 Mr '64.

1. State Commission for the Development and Coordination  
of Science and Technology, Prague.

VLCEK, Vaclav, inz.; BILEK, Vaclav, inz.

Production of malt and beer in the countries and answers. Kvasny  
prum 10 no. 6: Supplemen 41-43 1964.

BILEK, Ya. [Bilek, J.]; YANOVSKIY, M. [Janovsky, M.]

Some problems in neurohumoral regulation of lactation. Zhur.ob.  
biol. 23 no.4:241-255 J1-Ag '62. (MIRA 15:9)

1. Nauchno-issledovatel'skiy institut zhivotnovodstva Chekhoslo-  
vatskoy akademii sel'skokhozyaystvennykh nauk, otdeleniye fiziologii  
i Institut okhrany materinstva i mladenchestva v Prage.  
(LACTATION)

COGNATE : 0000  
CATEGORY : Farm Animals. Horses. 2-2  
ABS. JOUR. : RZBiol., No. 4, 1959, No. 16647  
AUTHOR : Bilek, Yan; Dushek, Ya.; Lekhnor, F.  
INST. : -  
TITLE : New Data on the Method of Obtaining Mare  
Milk and on Influencing Its Secretion.  
ORIG. PUB. : Za sots. s.-kh. nauku, 1957, A6, No 3,  
259-288  
ABSTRACT : The activity of the mare's milk gland was  
studied as well as the possibility of in-  
fluencing this gland with the goal in view  
of prolonging the lactation period; the tech-  
niques of milking mares were also studied.  
The experiments were conducted at the work  
bases of the Milicheskoye and Ksaverovskoye  
farms. It was determined that when machine  
milking was employed (with manual auxiliary  
milking at the end of it), the mares were  
CARD: 1/4

COUNTRY : USSR  
CATEGORY : Farm Animals. Horses.

0-2

ABS. JOUR. : RZBiol., No. 4, 1959, No. 16647

AUTHOR :  
INST. :  
TITLE :

ORIG. PUB. :

ABSTRACT : the temperature at supplementary milking, and by a certain reduction [of temperature] after milking is terminated. Warm applications (50°) have a positive effect upon the milk yield and upon the chemical composition of the milk (the fat and protein contents of the milk become increased). Milking of cows, beginning with the 4th month of lactation, did not affect colts adversely. The possibility of preserving some milk in a dry form

CARD: 3/4

**15123\*** Czechoslovakian Electroerosion Machining Apparatus. *Elektroerosivní obráběcí stroje v ČSR. (Czech.)* *Strojnická výroba*, v. 3, no. 6, June 1955, p. 247-250

Design, performance, and use in Czech and Soviet factories, advantages over "electro-spark" machining, provides an easy machining process for sintered carbides and high-strength steels. Photographs, tables.

*of*

*gan*



L 32077-66 EWT(1)/EWT(m)/EWP(v)/T-2/EWP(t)/ETI/EWP(k) IJP(c) JD/WK/EM  
ACC NR: AP6013387 (A,N) SOURCE CODE: UR/0096/66/000/005/0019/0021

AUTHOR: Dyban, Ye. P. (Candidate of technical sciences); Stradomskiy, M. V. (Candidate of technical sciences); Klimenko, V. N. (Candidate of technical sciences); Bileka, B. D. (Engineer); Piruyeva, L. V. (Engineer)

ORG: Industrial Electric Generation Institute of the AN UkrSSR  
(Institut tekhnicheskoy teplofikatsii AN UkrSSR--KTZ)

TITLE: Investigation of a system for <sup>2</sup>cooling the <sup>16</sup>rotor of a high pressure head-type gas turbine installation Model 4-750

SOURCE: Teploenergetika, no. 5, 1966, 19-24

TOPIC TAGS: gas turbine engine, combustion gas dynamics, engine cooling system, turbine compressor, turbine blade, heat resistant alloy, alloy steel / Model 4-750 gas turbine engine, EI-612K alloy steel, EI-415 alloy steel

ABSTRACT: The 4-750 gas turbine installation is of the slotted shaft type and is designed for electric trains; at an initial gas temperature of 750°C it has a useful power of 4000 kilowatts. The experiments described in the present article were carried out on a turbo-compressor block with simulation of the low pressure section by a special throttling unit. The article shows a diagram of the experimental

Card 1/2

UDC: 621.438.542.46.001.5

L 32077-66

ACC NR: AP6013387

5

apparatus. Cooling of the rotor was done with air at an initial temperature of 200°C. The turbine blades and the rotor disks were made of heat resisting alloys of the austenitic class, the blades of alloy EI-765, and the disks of alloy EI-612K. The temperatures of the metal, the gas, and the air were measured with Chromel-Alumel thermocouples. Experimental data on the temperature fields in the rotor disks are shown in a series of curves. The scheme tested made possible a maximum disk temperature of 500°C, which allows use of a heat resisting steel of the perlite type--alloy EI-415. The consumption of cooling air was 0.82 kg/sec but its distribution over the stages required considerable temperature drops over the thickness of the disks. Orig. art. has: 6 figures and 1 table.

SUB CODE: 21// SUBM DATE: none/ ORIG REF: 004

Card 2/2 BLG

BILEN, Bratislav, ing. (Beograd, Karadordeva 49)

Resistance of the ship in the shallow waters of a water way. Brodarstvo  
4 no. 10:369-380 Ja-Mr 61.

BILEN, Branislav, ins. (Karadordeva 49, Beograd)

Computing the ship resistance by the method of three-dimensional  
extrapolators. Brodarstvo 4 no.14:591-598 Ja-Mr '62.

BILEN, Branko, ins. (Beograd, Karadordeva 49); VISNJIC, Dragomir, ins.  
(Beograd, Licka 1)

Barges of 1000 freight ton capacity. Brodarstvo 4 no.15:  
662-667 Ap-Je '62.

BILENKIN, A.M.

Central compressor station. Koks i khim. no.2:51-52 '62.

(MIRA 15:3)

1. Gosudarstvennyy ~~vesoyuznyy~~ institut po proyektirovaniyu  
predpriyatiy koksokhimicheskoy promyshlennosti.  
(Coke industry--Equipment and supplies)

BILENKIN, D.

Snow and ice research. Izobr. i rats. no.6:18-19 Je '61.

(MIRA 14:6)

(Snow fences) (Soil freezing)

EMME, A., kand.biologicheskikh nauk; BILENKIN, D.

Steps of life. Znan. sila 36 no. 5:34-35 My '61.

(Life--Origin)

(MIRA 14:5)



BILENKIN, D.

Meeting the "lost world." Znan.-sila 37 no.12:38-39 D 162.

(Micropaleontology)

(MIRA 16:2)

BILENKIN, Dmitriy Aleksandrovich; KORNEYEV, S.G., red.

[Path "across impossible"] Put' "cherez nevozmozhno." Tam-  
bov, Knizhnoe izd-vo, 1964. 32 p. (MIRA 18:4)

BILENKIN, Dmitriy Aleksandrovich; ALEKSEYENKO, V.I., kand.tekhn.nauk,  
nauchnyy red.; GOLUBKOVA, V.A., red.; MEDVEDEVA, R.A., tekhn.red.

[Artificial leather] Iskusstvennaia kozha. Moskva, Izd-vo  
"Sovetskaya Rossiya," 1959. 8 p. (MIRA 13:7)  
(Leather, Artificial)

BILENKIN, D. A.

Titanium has been given the green light. NTO no.8:62 Ag '59.

(MIRA 12:11)

(Titanium)

BILENKIN, Dmitriy Aleksandrovich; CHIRPILYV, Viktor Ivanovich; STEPANYAN,  
E.T.S., red.; MEDVEDEVA, R.A., tekhn.red.

[This is the kind of technology we need] Nam nuzhna takaya  
tekhnika. Moskva, Izd-vo "Sovetskaya Rossiya," 1960. 55 p.  
(MIRA 14:4)

(Automation)

DOROKHOV, V.N.; RUBAKHIN, V.N.; BIL'GIL'DEYEV, A.S.; DOMANOVSKIY, A.Y.

Use of synthetic oils and fatty acids for oil-coating of rabbit  
pelts. Kosh.-obuv.prom. 2 no.5:15-17 My '60. (MIRA 13:9)  
(Hides and skins)

BILENKIN, D. A.

Cooper cobweb. Izobr.1 rats, no.4:14 Ap '60.  
(Wire drawing)

(MIRA 13:6)

BILENKIN, Dmitriy Aleksandrovich; ANTONYUK, L., red.; VOLYNTSEVA, V.,  
tekh.red.

[Gifts from two sciences] Dary dvukh nauk. Moskva, Izd-vo  
TsK VLSM "Molodaa gvardia," 1960. 38 p. (MIRA 13:5)  
(Electricity)



BILENKIN, D. A.

PHASE I BOOK EXHIBITION 507/4693

Nebozhennyy troyak Vostanoy (Orbital path of the  
Deliver) Moscow, Izd-vo "Fizmatgiz", 1979. 63 p. 11)  
(Series: Biblioteka "Kosmos" seriy pravyd, no. 11)  
131,000 copies printed.

Ed.: V. Bukharin; Tech. Ed.: V. Zhukov.

REMARKS: This popular science booklet is intended for the  
general reader.

CONTENT: The booklet contains 18 articles dealing with  
early and recent efforts and accomplishments in space  
exploration. Though popular in style, the articles are  
written by leading Soviet scientists in the field. The  
contributions of K. Y. Tsiolkovsky to space science  
are briefly presented. Scientific space exploration  
through space craft and certain practical engineering  
problems are discussed. No personalities are mentioned.  
No references are given.

REMARKS: A. A. (underlined). A flight into the Future 20

YANUSHKIN, V. [Doctor of Technical Sciences]. The  
Lunar Landing on the Moon 22

Dobromir, V. V. [Professor]. The Automatic Moon-  
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II. FLYING AHEAD THE STARS

GOLOVNIKOV, Ya. [Engineer]. Transport on Space Routes 33

YAKOVLEV, I. Radio Electronics - the Realm of Space 37

MILNIN, D. [Engineer]. Electric Power Station in Space 44

Mikhaylov, Ya. [Engineer]. Control Surfaces of Space  
Craft 47

BOYD, V. [Candidate of Physics and Mathematics, Worker  
of the Gosudarstvennyy astronomicheskii Institut Imeni  
P. K. Shternberga - State Astronomical Institute Imeni  
P. K. Shternberga]. The Mars and  
Galileo. Ya. [Engineer]. Photon Boats - Space Ship of  
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Perkins, V. Maps, a Near Future 57

AVAILABLE: Library of Congress 58

AZERNIKOV, V.; ARLAZOROV, M.; ARSKIY, F.; BAKANOV, S.; BELOUSOV, I.;  
BILENKIN, D.; VAIEL', I.; VLADIMIROV, L.; GUSHCHEV, S.;  
YELAGIN, V.; YERESHKO, F.; ZHURBINA, S.; KAZARNOVSKAYA, G.;  
KALININ, Yu.; KELER, V.; KONOVALOV, B.; KREYNDLIN, Yu.;  
LEBEDEV, L.; PODGORODNIKOV, M.; RABINOVICH, I.; REPIN, L.;  
SMOLYAN, G.; TITARENKO, V.; TOPILINA, T.; FEDCHENKO, V.;  
EYDEL'MAN, N.; EMME, A.; NAUMOV, F.; YAKOVLEV, N.;  
MIKHAYLOV, K., nauchn. red.; LIVANOV, A., red.

[Little stories about the great cosmos] Malen'kie rasskazy o  
bol'shom Kosmose. Izd.2., Moskva, Molodaia gvardiia, 1964.  
368 p. (MIRA 18:4)

BILENKIN, L. D.

Jan 53

USSR/Electronics - Relaxation Oscillators

"Theory of the Blocking Oscillator," L. D. Bilenkin

Zhur Tekh Fiz, Vol 23, No 1, pp 98-110

The blocking oscillator, which is a special case of the self-excited oscillator with a grid leak, is described by an eq of the third (or higher) order. A strict study of the blocking oscillator can be made if this eq is reduced to the second order. This can be done by 2 methods and the author demonstrates the advantages of one of these methods. Thanks Prof K. F. Teodorchik. Submitted 5 Jan 51.

267T63

BILENKIN, N.YA.

AUTHOR: BILENKIN, N.YA.

PA - 2904

TITLE:

The Matrix Elements of the Irreducible Unitary Representations of the Group of Real Orthogonal Matrices and of the Group of the Motions of a  $(n - 1)$ -dimensional Euclidian Space. (Matrichnyye elementy neprivodimyykh unitarnyykh predstavleniye gruppy veshchestvennykh ortogonal'nykh matrits i gruppy dvizheniy  $(n-1)$ -mernogo yevklidova prostranstva, Russian)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 1, pp. 16 - 19 (U.S.S.R.)  
Received: 5 / 1957 Reviewed: 6 / 1957

ABSTRACT:

The present paper deals with the groups  $SO(n)$  of the real orthogonal matrices (denoting the group of the rotations of an  $n$ -dimensional Euclidian space) and with the group of the  $M(n-1)$  motions of a  $(n-1)$ -dimensional Euclidian space. The matrix-elements found in the present paper represent special new functions, which in a few special cases are transformed into GEGENBAUER's polynomials (for the  $SO(n)$ ) and into the BESSEL-functions (for the group  $M(n-1)$ ).

Within the group  $SO(n)$  a system of parameters analogous to EULER's angles for the group  $SO(3)$  exists. Every element of the group  $SO(n)$  can be represented in the form  $\omega = \varphi_{n-1} \omega_{n-1} \varphi_{n-2} \dots \omega_1$ . On this occasion  $\varphi$  denotes such a rotation which leaves the axis  $x_n$  unchanged, and  $\omega_k$  a rotation in the plane  $(x_k, x_{k+1})$  with the angle  $\varphi_k^{(n-1)}$ . If the

Card 1/2

BIENKINA, G. YA.

35966

O mekhanizme rasshchepleniya B-okslaminokislot glitstnogenazoy.  
doklady akad. nauk sssr, novaya seriya, T. LXIX, No. 3, 1949.  
S. 385-388.- bibliogr: 9 nazv.

SO: Letopis' Zhurnal'nykh Statey, No. 49, 1949

"APPROVED FOR RELEASE: 06/08/2000

CIA-RDP86-00513R000205310015-4

APPROVED FOR RELEASE: 06/08/2000

CIA-RDP86-00513R000205310015-4"

TAL'YANSKIY, I.I.; BILIM'KIY, B.F.; DRAGAN, Ya.P.

Contribution to the theory of neutron logging. Prikl.geofiz. no.25:  
223-233 '60. (MIRA 13:6)  
(Oil well logging. Radiation)

BILEN'KIY, B.F. [Bilen'kyi, B.F.]; PASHKOVSKIY, M.V. [Pashkovs'kyi, M.V.];  
NOSENKO, A.Ye. [Nosenko, A.IE.]; GRECHUKH, Z.G. [Hrechukh, Z.H.]

Optical properties of mercury sulfide. Ukr. fiz. zhur. 8 no.8:  
913-915 Ag '63. (MIRA 16:11)

1. L'vovskiy gosudarstvennyy universitet im. Iv. Franko.



1-45738-65 EPA(a)-2/EWT(m)/EWP(b)/EWP(t) pt-7 LJP(c) JD/ja/es

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Cord 1/A

1-5770-61

Cord 2/B

L 16935-66 EMB(L) EMB(M) EMB(W) P/EMB(C) P/EI LINDA 12 1966  
ACC NR: AP6015491 (A) SOURCE CODE: UR/0181/66/008/005/1613/1616

AUTHOR: Dovgiy, Ya. O.; Bilen'kiy, B. F.

ORG: L'vov State University im. Iv. Franko (L'vovskiy gosudarstvennyy universitet)

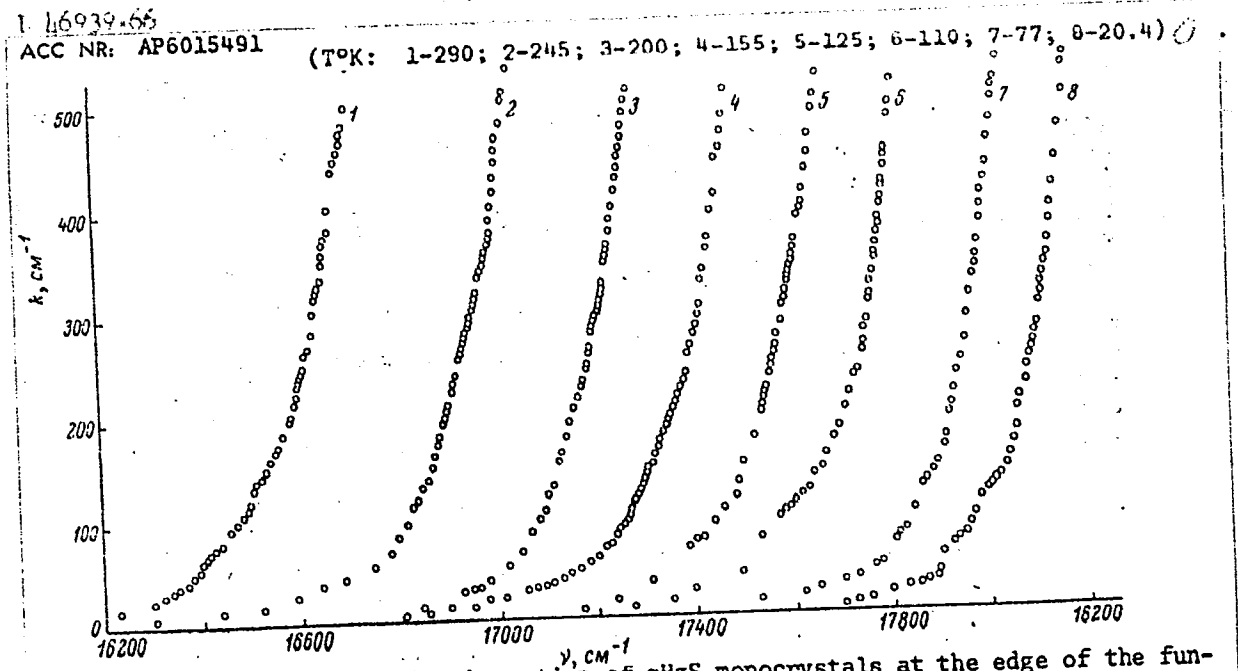
TITLE: Investigation of the fundamental absorption band of αHgS single crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1613-1616

TOPIC TAGS: absorption edge, mercury compound, crystal absorption

ABSTRACT: Since the physical properties of αHgS have not been sufficiently investigated, the authors examined the absorption spectra of αHgS in the fundamental absorption band. Conventionally-grown crystals 40-50 μ thick were used in the study. The optical absorption in the 20.4 to 290°K range was measured by a diffraction spectrophotograph; a specially-designed cryostat was used for low-temperature measurements. The optical density was determined by photographic photometry and all measurements were conducted in unpolarized light. The obtained relationships are shown in figure 1. Notably, no discrete structures, such as reported by other authors, were observed at the edges. The author thank I. V. Savitskiy and R. V. Lutsiv who made the crystals available for measurements, M. S. Brodin and V. Ya. Reznichenko for their assistance in performing absorption measurements at hydrogen temperature, and D. I. Bobelyak who also participated in the experiments. Orig. art. has: 2 figures.

Card 1/2



Spectral relationships of the absorption of cHgS monocrystals at the edge of the fundamental absorption band, at various temperatures.

SUB CODE: 20/

SUBM DATE: 07Jul65

ORIG REF: 004/

OTH REF: 002

Card 2/2 *au m*

*BILEN'KIY, S.M.*  
USSR/Nuclear Physics - Elementary Particles.

C-3

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 371  
Author : Bilen'kiy, S.M.  
Inst : Joint Institute for Nuclear Research.  
Title : Level Shift of  $\pi$ -Mesonic Atoms.  
Orig Pub : Zh. eksperim. i teor. fiziki, 1957, 32, No 3, 624

Abstract : A simple formula is obtained, for the shift of the ground level of the  $\pi$  mesonic atom, resulting from the nuclear interaction between the  $\pi$  meson and a nucleus; this formula is expressed in terms of the average value of the potential and of the nuclear dimensions. It is noted that the potential, calculated with the aid of this formula from the observed level shift for light nuclei, varies irregularly with the variation of the atomic number A. Such a behavior cannot be explained by the variation

Card 1/2

BILEN'KIY, S. M.

56-3-53/59

AUTHOR: Bilen'kiy, S.M.

TITLE: The Application of Charge Invariance to Polarization Phenomena  
(Primeneniye zaryadovoy invariantnosti k polyarizatsionnym yavleniyam) (Letter to the Editor)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 3 (9),  
pp. 821 - 822 (USSR)

ABSTRACT: As is known, the hypothesis of charge invariance leads to relations between experimentally observable amounts. Hitherto only the relations between the cross sections of various processes have been derived. In connection with the experiments concerning the modification of polarization, also the realtions resulting from the charge invariance, which contain a polarization, are of interest. The author here investigates a very simple method for the determination of such relations.

For the interactions caused by the process  $a + A \rightarrow b + B$  the isotopic spin is assumed to be conserved. The isotopic spins of the corresponding particles and their projections are denoted here with  $j_a, j_A, j_b, j_B$  and  $m_a, m_A, m_b, m_B$ . The amplitude describing the transition  $m_a, m_A \rightarrow m_b, m_B$  can then be written

Card 1/3

56-3-53/59

## The Application of Charge Invariance to Polarization Phenomena

down by means of the coefficients by Clebsch-Jordan in the form

$$R_{m_a m_A; m_b m_B} = \sum_j (j_a j_A m_a m_A | j_a j_A j_m) R_j (j_b j_B m_b m_B | j_b j_B j_m).$$

$R_j$  denotes the amplitude in the state with determined total isotopic spin; it depends upon the angles, upon the spins and upon the energy. The operators  $T_k$  acting upon the spin variable  $n$  of the particles  $b$  and  $B$  may form a full set of matrices. The quantities experimentally observable are then the average values  $\langle T_k \rangle$ ; an expression herefor is written down. For  $T_k = 1$  relations between the differential cross sections are obtained.

The formulae obtained here are then applied for the investigation of the scattering of pions by nucleons; the relations thus found are explicitly written down.

By means of the here derived relations the cross sections and the polarizations for the states with determined total isotopic spin can be easily expressed by experimentally observable cross sections and polarizations. There are 2 Slavic references.

Card 2/3

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The Application of Charge Invariance to Polarization Phenomena 56-3-53/59  
.

ASSOCIATION: United Institute for Nuclear Research  
(Ob'yedenennyy institut yadernykh issledovaniy)

SUBMITTED: June 21, 1957

AVAILABLE: Library of Congress

Card 3/3



*Bilen'kiy, S. M.*

AUTHORS: Bogolyubov, N. N., Academician 20-5-11/54  
Bilen'kiy, S. M., Logunov, A. A.

TITLE: Dispersion Relations in Cases of Weak Interaction  
(Dispersionnyye sootnosheniya v sluchayakh slabogo  
vzaimodeystviya).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 5,  
pp. 891-893 (USSR)

ABSTRACT: At present dispersion relations meet with considerable  
interest because in this way the fact of the existence  
of an elementary length can be determined experimentally.  
It is of interest to analyze what these relations tell  
us in the case of a weak interaction. As an example the  
authors investigate the reaction



in which, besides a weak interaction, there exists a  
strong interaction between nucleon and the meson field.  
In the theory of the dispersion relations the amplitude of  
the process is split up into a hermitean and an antihermitean  
part. In those systems of coordination in which the sum

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## Dispersion Relations in Cases of Weak Interaction

20-5-11/54

of the momenta of the nucleon before and after the reaction is equal to zero, the hermitean part  $D$  is equal to a certain integral of the antihermitean part  $A$  plus any polynomial  $P_n(E)$  above the energy  $E$  of the impinging particle. The antihermitean part of the amplitude is expressed by the product of the meson current and the neutrino current. Because of the smallness of the constant of the weak interaction only those terms must be taken into account which contain the coupling constant in first approximation. This product is here at least small of second order and therefore the antihermitic part in the approximation investigated here is equal to zero. Accordingly, the dispersion relation takes on an especially simple form:  $D(E) = P_n(E)$ . Next, the matrix element of the process  $\mu + p \rightarrow n + \nu$  is written down and transformed. The unknown functions of the amplitude of the process determined by strong interaction depend only upon the transmission of the momentum to the nucleons. By

CARD 2/3

Dispersion Relations in Cases of Weak Interaction

20-5-11/54

studying the dependence of these functions of the transmission of the momentum to the nucleon, the "meson-neutrino structure" of the nucleon can be determined. The effective measurements of the "meson-neutrino structure" are apparently the same as the "meson structure". The results obtained here are well suited for the  $\beta$ -decay and for those processes of decay of hyperons and K-mesons, in which, together with particles which are in strong interaction, also  $\mu$ ,  $e^-$  and  $\nu^-$  particles participate. From the point of view of the verification of the causation principle the study of angular- and energy distribution of the electrons and myons in the processes of decay of the hyperons and K-mesons is of special interest. There are 1 figure, and 2 Slavic references.

ASSOCIATION: United Institute for Nuclear Research (Ob'yedinennyy institut yadernykh issledovaniy).

SUBMITTED: May 22, 1957

AVAILABLE: Library of Congress

CARD 3/3

On the Theory of Dispersion Relations for Complex Processes

SOV/155-58-3-33/37

certain cuts along the real axis. At the banks of the cuts the  $\phi^r(g, E)$  and  $\phi^a(g, E)$  for  $g \rightarrow 0$  tend to the lagging and leading amplitude, respectively. The dispersion relations appear as conclusions by the application of the Cauchy theorem to these functions.

There are 6 references, 4 of which are Soviet, 1 Italian, and 1 American.

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

SUBMITTED: April 25, 1958

Card 2/2

BILENKIY, S. M., LAPIDUS, L. I., PUZIKOV, L. D. and RYNDIN, R. M.

"Phenomenological Analysis of Reactions of the  $a + a' \rightarrow b + b'$  Type."  
Nuclear Physics, Vol. 7, No. 6, p. 646-654, 1958, No. Holland Publ. Co.

Abstract: Conditions for the construction from experimental data of the matrix for reactions of the  $a + a' \rightarrow b + b'$  type are considered on basis of general principles of quantum mechanics. The reaction matrix  $M$  is expanded in a complete set of irreducible tensor operators  $T_{J^m}(\gamma b, \gamma a)$  and the number of complex scalar functions which determine it is computed for the case when invariance under space rotations and reflections is taken into account. Time reversal invariance of the interaction leads to relations between polarization effects in the direct and inverse reactions. The number of experiments required for complete construction of the reaction matrix in the presence of several channels can be determined on basis of unitarity of the  $S$  matrix.

The general form of the azimuthal dependence of the angular distribution of the reaction products (for arbitrary spins) is derived in the appendix.

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

AUTHOR: Bilen'kiy, S. M.

56-2-40/51

TITLE: On the Theory of Dispersion Relations (K teorii dispersionnykh sootnosheniy)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 2, pp. 513 - 519 (USSR)

ABSTRACT: Bogolyubov et al. (reference 1) showed that the "antithermitic" part of the amplitude in first approximation is equal to zero with respect to the constant  $C$  of the weak interaction in such processes in which besides the particles with strong interaction  $\mu$ ,  $e$ - and  $\nu$ -particles take part. This essentially simplifies the deductions as well as the form of the dispersion relations. The dispersion relations reduce in such a case to the assumption that the amplitude of the process depends polynomially on the sum of the four-momenta of the particles being in weak interaction. (In decomposition processes they depend on the difference of the four-momenta). If the Lagrangian of interaction does not contain any derivatives of the field strength the am-

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On the Theory of Dispersion Relations

56-2-40/51

plitude does not depend on the momenta of the particles being in weak interaction. It is also easy to investigate such processes in which only particles take part which are in weak interaction (e.g. the decay of a myon). The principle of causality in the given case leads to a Lagrangian of local character in relation to all fields, and the dispersion relations reduce to the assumption that the amplitude only polynomially depends on the momenta. The case of weak interactions makes possible a simple analysis of the fundamentals of the theory of dispersion relations. In first approximation and with respect to  $C$  the commutator of the current intensities of the particles in weak interaction is equal to zero for any Lagrangian within the whole space. This also applies to the non-local Lagrangian. The non-local Lagrangians do not at all lead to a polynomial dependence. Then the author deduces an expression for the scattering amplitude. The dependence of the amplitude on the momenta is determined by the nucleus of the Lagrangian interaction. In the case of several non-local interactions the dispersion relations can also occur. As example the author investigates a process which is described by diagrams given. When the amplitude of

Card 2/3

On the Theory of Dispersion Relations

56-2-40/51

scattering satisfies the dispersion relations this does, in the general case, not mean that the principle of causality is fully complied with. Only the following can be maintained: In the case of the dispersion relations being not valid also the principle of causality is dropped. There are 1 figure, and 4 references, 3 of which are Slavic.

ASSOCIATION: United Institute for Nuclear Research  
(Ob'yedinennyy institut yadernykh issledovaniy)

SUBMITTED: November 19, 1957

AVAILABLE: Library of Congress

1. Particles-Scattering-Theory

Card 3/3



21(7)

AUTHORS:

Bilen'kiy, S. M., Ryndin, R. M.

SOV/56-35-3-60/61

TITLE:

A Possible Method for the Determination of the Polarization of a Hyperon in the Reaction  $\pi+p \rightarrow Y+K$  (Vozmozhnyy metod opredeleniya polyarizatsii giperona v reaktsii  $\pi+p \rightarrow Y+K$ )

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 3, pp 827 - 828 (USSR)

ABSTRACT:

One of the most important characteristics of interactions leading to the production of strange particles is the polarization of hyperons. The present paper suggests a method of determining the polarization of hyperons in the reactions  $\pi+ p \rightarrow (\Sigma, \Lambda) + K$ ,  $K + p \rightarrow (\Sigma, \Lambda) + \pi$ . This method is based on measuring the asymmetry of K-mesons and pions with the polarized proton target in the aforementioned reactions. The matrix of a reaction of the above-mentioned type can be written down in the general form  $M = a + b\vec{\sigma}$  (spin of the hyperon = 1/2, spin of the K-meson = 0). For the density matrix of the initial state it applies that  $\rho_0 = (1 + \vec{P}_0 \cdot \vec{\sigma})/2$ , where  $\vec{P}_0$  denotes the polarization of the target-protons. An expression for the differential cross-

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A Possible Method for the Determination of the  
Polarization of a Hyperon in the Reaction  $\pi+p \rightarrow Y+K$

SOV/56-35-3-60/61

section is given, and the polarization of the hyperon for the case of an unpolarized proton-target is calculated. According to the internal polarity of the particles participating in the reaction two cases may be distinguished:

- 1) Internal polarity does not change, i.e. it applies that  $I_{\pi} I_p = I_Y I_K$ . In this case the aforementioned matrix is a scalar. The corresponding expressions for  $\vec{\sigma}$  and  $\vec{\beta}$  are written down.
- 2) Internal polarity changes, i.e. it applies that  $I_{\pi} I_p = -I_Y I_K$ . In this case the matrix is a pseudoscalar.

Measurement of the asymmetry of the initially mentioned reactions in the case of a polarized target would permit the determination of the polarization  $P$  of the hyperon in a reaction with an unpolarized target. If the parity ( $KY$ ) with respect to  $(\pi p)$  were known, this experiment would, at the same time, make it possible to determine the sign of polarization. If, on the other hand, the sign of polarization is determined from the decay of the hyperon, the experiment suggested would make it possible to determine the relative parity ( $KY$ ). There are 2 references.

Card 2/3

A Possible Method for the Determination of the  
Polarization of a Hyperon in the Reaction  $\pi+p \rightarrow Y+K$

SOV/56-35-3-60/61

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

SUBMITTED: July 26, 1958

Card 3/3

24(5), 16(0)

AUTHORS:

~~Bilenkiy, S. M.~~, Lapidus, L. I.,  
Puzikov, L. D., Ryndin, R. M.

SOV/56-35-4-18/52

TITLE:

On the Determination of the Matrix for the Reaction  
 $a+a' \rightarrow b+b'$  (Ob opredelenii matritsy reaktsii  $a+a' \rightarrow b+b'$ )

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,  
Vol 35, Nr 4, pp 959 - 961 (USSR)

ABSTRACT:

Wolfenstein (Vol'fenshteyn) and Ashkin set up a general expression for the scattering amplitudes of particles with spin 0 and 1/2 on particles with spin 1/2 on the basis of the invariance conditions in space revolutions and reflections and time reversal. Proceeding from these expressions, and by using the **unity** of the S-matrix, Puzikov, Ryndin and Smorodinskiy (Ref 2, investigated the question as to how many experiments are necessary in order to obtain a complete determination of the scattering amplitudes in these cases. The authors of the present paper investigate the general case of a reaction of the scheme  $a+a' \rightarrow b+b'$ .

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- . On the Determination of the Matrix for the Reaction  
 $a+a' \rightarrow b+b'$

SOV/56-35-4-18/52

The number of complex scalar functions defining the reaction matrix  $M$  is determined with the aid of the conditions of invariance with respect to space rotations and reflections. Time reversal invariance leads to relations between polarization effects in direct and inverse reactions. An expression for the amplitude of the process and another for the ratio between the matrices of direct and inverse direction is first given. On the basis of an example of 2 channels the number of experiments is determined that is necessary for a complete determination of the reaction matrix. In conclusion the authors thank Ya.A.Smorodinskiy for discussing the problem dealt with. There are 3 references, 2 of which are Soviet.

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

Card 2/3

9-3

21(1,6); 24(5)      **PHASE I BOOK EXPLANATION**      SOV/3369

Yessoyunaga meshchuzovskaya konferentsiya po kvantovoy teorii polya i teorii elementarnykh chastits. Uzhgorod, 1958

Problemy sovremennoy teorii elementarnykh chastits. No. 21. Tretya konferentsiya... (Problems in the Modern Theory of Elementary Particles. No. 21. Transactions of the All-Union Inter-Vus Conference on the Quantum Field Theory and the Theory of Elementary Particles) Uzhgorod, Zakarpatskoye oblastnoye isd-vo, 1959. 214 p. 5,000 copies printed.

M.: Ya. Koszarski, Dozent; Tech. M.: N. Belous.

**PURPOSE:** This book is intended for physicists, particularly those concerned with problems in the field of elementary particles and the quantum theory.

**COVERAGE:** This book contains articles on elementary particles originally read at the All-Union Inter-Vus Conference held at Uzhgorod State University on October 26, 1958. Among the topics discussed are: the spinor field theory, the fusion theory, Lorentz contractions, parity studies, nucleon-nucleon scattering, etc. English abstracts accompany each article. References follow each article.

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24(5)

SOV/56-36-1-41/62

AUTHOR:

Bilen'kiy, S. M.

TITLE:

A Possible Method for the Determination of the Parity of Strange Particles (Vozmozhnyy metod opredeleniya chetnosti strannykh chastits)

PERIODICAL:

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ABSTRACT:

The present paper shows that the internal parities of K-mesons and hyperons can be determined by investigating the reactions  $\pi + p \rightarrow \Lambda(\Sigma) + K$ ,  $K + p \rightarrow \Lambda(\Sigma) + \pi$  on a polarized proton target. The spin of the hyperon is assumed to be equal to  $1/2$ , and the spin of the K-meson - equal to zero. In this case, the matrix of reactions of the above given type has the form  $M = a + \vec{b} \cdot \vec{\sigma}$ . It is a scalar if total internal parity does not vary, and a pseudoscalar in the opposite case.  $a$  and  $\vec{b}$  are determined by the relative momenta of the initial and of the final states. For the above-given processes the differential cross section the formula (3):  $\sigma(\theta, \varphi) = \sigma_0(\theta) (1 + \vec{P}_0 \cdot \vec{P}_Y)$  is found. ( $\sigma_0$  denotes the cross section for the process on an unpolarized target,

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$\vec{P}_0$  the initial polarization of the protons,  $\vec{P}_Y$  the polarization of the hyperons in a reaction on an unpolarized proton target; the vector  $\vec{P}_Y$  is orthogonal to the plane of the reaction). In the above-given formula, the plus sign corresponds to  $I_Y I_K = I_p I_\pi$ , and the minus sign - to  $I_Y I_K = -I_p I_\pi$  (where  $I$  denotes the internal parity of the particle). An expression is deduced for the degree of asymmetry. The product of the internal parities  $I_Y I_K I_p$  can be determined definitely from experiments on a polarized proton target by using the data concerning the sign of the polarization which were obtained by investigating the decay of polarized hyperons. The author emphasizes that (3) holds exactly. An investigation of various reactions of the type  $\pi + p \rightarrow \Lambda(\Sigma) + K$ ,  $K + p \rightarrow \Lambda(\Sigma) + \pi$  on polarized proton targets would permit the determination of the relative parity of hyperons. All the conclusions arrived at in the present paper hold good also for reactions with polarized nuclei

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with spin  $1/2$  in which a hypernucleus of spin  $1/2$  is  
produced in the final state. There are 5 references, 2 of  
which are Soviet.

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TITLE:

On the Relativistic Relation "Polarization - Asymmetry"  
(O relyativistskom sootnoshenii "polyarizatsiya - asimmetriya")

PERIODICAL:

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ABSTRACT:

The usual method of determining the polarization of particles consists in measuring the azimuthal asymmetry of the scattering of polarized particles and is based upon the equality of the azimuthal asymmetry of the polarization of the incident particles and that occurring in the scattering of unpolarized particles. For the nonrelativistic case Wolfenstein and Askin (Refs 1, 2) already investigated conditions, and in the present "Letter to the Editor" the authors give a short report on the case of the scattering of relativistic particles. The case of the elastic scattering of particles with spin 1/2 on spinless particles is investigated: The density matrix is given

by  $\rho = \frac{1}{2} (1 + \gamma_5 \gamma_\mu \hat{p}_\mu) \Lambda_p$ , where  $\Lambda_p = (\gamma_\mu p_\mu + im)/2im$  is

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the projecting operator,  $m$  - the rest mass of the particle,  
 $\xi_\mu = iSp \gamma_5 \delta_\mu \rho$ , a space-like pseudovector orthogonal  
 to  $P_\mu$  ( $\xi_\mu P_\mu = 0$ ). The degree of polarization is  $P = \sqrt{\xi_\mu \xi_\mu}$ .  
 This matrix for the final state has the form

$$\rho_{scatt} = \Lambda_{p'} M \rho_{inc} \beta M^\dagger \beta \Lambda_p.$$

Herefrom a formula is

derived for the scattering cross section of the polarized  
 beam, and for the polarization - asymmetry relation

$\sigma = \sigma_0 (1 + \xi_\mu^{inc} \xi_\mu^0)$  is obtained;  $\sigma_0$  is the scattering cross  
 section of the unpolarized particles,  $\xi_\mu^0$  - the vector of  
 the polarization occurring in the case of the scattering  
 of unpolarized particles, and  $\xi_\mu^{inc}$  - the corresponding  
 vector in the scattering of polarized particles. This  
 equation applies also to the case of a reaction of the type  
 $1/2 + 0 \rightarrow 1/2 + 0$  if the internal parity of all particles  
 is + 1; if it is - 1, also the sign of the product of the  
 polarization coefficients changes. The asymmetry  $\xi$  is thus

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$\int_{\mu}^{\circ} \int_{\mu}^{\circ}$ , i. e. equal to the square of the invariant  
degree of polarization. There are 3 references.

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