ULBRICH, Sandor, dr., a muszaki tudomanyok kandidatusa

Kinetics of controllable hydraulic motors with axial pistons. Gep 13 no.5:176-183 My '61.

1. Szerszamgepfejleszto Intezet.

ULBRICH, Sandor, dr., a muszaki tudomanyok kandidatusa

Dynamic testing of hydraulic directional change. Gep 15 no.5:201-209 My '63.

1. Szerszamgepfejleszto Intezet.

ULBRICH, Sandor, a muszaki tudomanyok kandidatusa

Present state of aggregating mechine tools. Gep 16 no.1: 17-26 Ja'64.

1. Szerszamgepipari Muvek Fejleszto Intezete.

~~VLADIMIR~~, ULBRICH, Vladimir

CZECH

Determination of butoxyl groups in butanol-modified phenolic resins. Zdeněk Ditrych, Hana Reihová, and Vladimír Ulbrich (Výzkumný ústav syntn. pryskyřic, Pardubice, Czech.). *Chem. Listy* 49, 869-71(1955).—The Zeisel method proved to be suitable for the detn. of BuO groups in BuOH-modified phenolic resins provided the following conditions were applied: heating-bath temp. 175°, cooling-water temp. 40°, reaction time 3 hrs. from the beginning of the boiling of HI, titration with 0.05 or 0.02N $Na_2S_2O_3$. Standardization was carried out with BuOCONHPh. M. Hudlický

CH

(2)

2 [illegible]

BE

ULBRICH, V.

Amperometric determination of 2, 2-bis-p-hydroxyphenlpropane using bromine. p. 743

(Institute of Applied Physics - Czechoslovak Academy of Science) Vol. 50, No. 5 May 1956

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 5 May 1958

ULBRICH, VLADIMIR

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Lacquers, Paints. Lacquer-Paint Coatings. H-30

Abs JOur: Ref. Zhur-Khimiya, No 11, 1958, 38193.

Author : Rejhova Hana, Ulbrich Vladimir.
Inst : Not given.
Title : The Identification of the Glycol Component in Unsaturated Polyester Resins and Lacquers, by means of Paper Chromatography.

OriggPub: Chem prumysl, 1957, 7, No 4, 212-215.

Abstract: A method of fast identification of polyatomic alcohols entering into the composition of unsaturated polyester resins was developed by the method of paper chromatography (in the character of a traveling phase, n-butanol is effected by means of saturated water. The method was

Card : 1/2

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Lacquers. Paints. Lacquer-Paint Coatings. H-30

Abs Jour: Ref. Zhur-Khimiya, No 11, 1958, 38193.

developed on artificial mixtures of polyatomic alcohols, and verified on industrial types of polyester resins. The method is fast since the analysis is conducted on the unrefined alcohol component extracted by saponification of the tested resin. The ingredients (alkali, potassium salt) are separated out in the beginning and do not influence the result. The data obtained by paper chromatography were subjected to the usual chemical analysis.

Card : 2/2

VLBRICH, V.

: Czechoslovakia

II-29

47773

: Ulrich, V.; Makes, J.

: Semi-Micro Method of Determining Active Hydrogen in Epoxy-Resins with Lithium-Aluminum Hydride.

: Chem. prumysl, 1958, 8, No 3, 163-166

Abstract : The determination is carried out in the thermostatic apparatus of Souchka (RZhKhim, 1956, No 23, 75480). A 15-20 mg sample of epoxy-resin is dissolved in 4 ml anisole and treated with 1 ml of a solution of 15 g $LiAlH_4$ in 100 ml tetrahydrofuran. The error of this method, which was tested on chemically pure benzoic and salicylic acid, p-nitrophenol, alpha-naphthol and diphenylolpropane, does not exceed 2-2.5%. The method can be successfully utilized for determination of OH-groups in low-molecular and high-molecular epoxy-resins. -- L. Pesin.

Card:

II-29

ULBRICH, VLADIMIR

Mechanism of epoxide resin formation. Miloslav Lee, Jaroslav Kinel and Vladimir Ulbrich (Výzk. ústav syntet. pryskyřic, Pardubice, Czech.). Chem. Listy 50, 1960-3(1956).—The alk. condensation of 2,2-bis(4-hydroxyphenyl)propane (I) with epichlorohydrin (II) [illegible] by the method of C.A. 50, 16013e, and by detg. alkv. and thermal characteristics. The 1st phase of reaction between I and II is characterized by addn. of an epoxide group to the phenolic hydroxyl, which is then followed by dehydrohalogenation of the chlorohydrin ether formed to produce a new epoxide group. Reaction of I with III diffuses only in the 1st phase, where III is converted to II under simultaneous addn. Reaction between I and IV is quite analogous with the sole difference that glycidol is formed in the initial phase which is then [illegible] reaction between II and phenolate is possible. — Urbánek

~~VLADIMIR~~ ULBRICH Vladimir

CZECHOSLOVAKIA/Analysis of Organic Substances. G-3

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 19690

Author : Vladimir Ulbrich
Title : Amperometric Determination of 2.2-Bis-n-Oxyphenylpropane by Bromometric Method.

Orig Pub : Chem. listy, 1956, 50, No 5, 743-747

Abstract : The amperometric titration of 2.2-bis-n-oxyphenylpropane (I) was carried out. By this titration, the consumption of Br_2 in the bromation process of I alone and of I mixed with epichlorohydrin (II) in presence of condensation products was studied. For the preparation of solutions for titration, dimethylformamide in which the condensation products are well soluble was used. The methid was used for the time study of the process of condensation of I with II in an alkaline medium at the manufacturing of epoxide tars. The results were arranged in 4 tables and the determination error was computed; it amounts to5% for 2.2×10^{-5} mole of I and to 0.6% for 1.7×10^{-4} mole of I.

Card 1/1

ULBRICH, V.; MAKES, J.; JURECEK, M.

Identification of glycidyl ethers; bis-phenyl and bis-α-naphthylurethan of α-alkyl(aryl)ethers of glycerin. Coll Cz Chem 29 no. 6:1466-1475 Je '64.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice (for Ulbrich and Makes). 2. Institute of Analytical Chemistry, Higher School of Chemical Technology, Pardubice (for Jurecek).

ULBRIKH, Sh., aspirant.

Investigating transient processes in governors controlling oil inflow and outlet rates. Issl. v obl. metallorezh.stan. no.3:145-168 '55. (MLRA 10:2)

(Hydraulic transmission) (Governors (Machinery))

UL'BRIKH, Ya. I., Cand Med Sci -- (diss) "Comparative evaluation of data of the functional capacity of the heart in young and adult athletes." Moscow, 1960. 16 pp; (State Central Order of Lenin Inst of Physical Culture im I. V. Stalin); 200 copies; price not given; (KL, 28-60, 166)

UL'BRIKH, Ya.I.

Heart sounds in adult and in youthful athletes at rest and following physical exertion. Probl. vrach kontr. no.5:363-375 '60. (MIRA 14:3)

(HEART—SOUNDS) (EXERCISE)

GREBE, A., doktor nauk; REYNISH, G., doktor nauk; TSIMMERMAN, G., doktor nauk; GREBE, F., doktor nauk; UL'BRIKHT, I., doktor nauk; SHIFFNER, R., doktor nauk; FILIPP, B., doktor nauk; RUSHER, Kh., doktor nauk; GASPERSON, G., doktor nauk; KLARE, G., doktor nauk; YAKOPYAN, V.

Search and solutions; important research of the German Democratic Republic chemists. Priroda 54 no.6:83-88 Je '65.

(MIRA 18:6)

1. Institut izucheniya volokna Germanskoy Akademii nauk v Berline, g. Tel'tov, Germanskaya Demokraticheskaya Respublika.

BLASKOVIC, D.; MAKSIMOVIC, N.A.; STYK, B.; ALBRECHT, P.; technicka spolupraca ULBRIKOVA, R.; RAUS, J.

The course of adaptation of inhibitor resistance of influenza virus A2 for ferrets. Cesk. epidem. mikrob. imun. 10 no.3:158-165 '61.

1. Virologicky ustav CSAV, Bratislava, CSSR, a Institut infekcionnych boleznej AMN SSSR, Kijev.
(INFLUENZA VIRUSES immunol.)

S/138/61/000/005/003/006
A051/A129

AUTHOR: Ul'brkht, Ya.

TITLE: Reactors for emulsion polymerization

PERIODICAL: Kauchuk i rezina, no. 5, 1961, 12 - 15

TEXT: A technological process for the production of the first Czech rubber, ЧКС-1 (ChKS), based on butadiene and styrene, is being developed at the present time at the Scientific Research Institute of Synthetic Rubber (NISSK) in the city of Gottwaldow. The plant for the production of ChKS-1 is to be put up in Kralupy near Vltava. During the construction of this plant the necessity for erecting reactors of polymerization arose. Industry demands a switch-over from designing the polymerization reactors by empirical methods to that of construction-technological computations. The present article deals with the results of the work on the total volume and number of reactors. At first, the emulsion polymerization on an industrial scale was carried out by the batch method in separate reactors with mixers. At present the method of continuous polymerization is widely used carried out in batteries consisting of a number of apparatus with mixers. A computation of this polymerization battery was performed. The main parameter characterizing

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Reactors for emulsion polymerization

the relationship between the volume of the reactor and its productivity is the duration of the reaction mixture's presence in it. This duration τ is determined by the following relationship:

$$\tau = \frac{V}{F} \qquad (1)$$

where V is the working capacity of one reactor of the battery, F - rate of flow of the reaction mixture. Usually this ratio multiplied by the number of reactors is called the "time of polymerization under continuous action". This time is greater than that required to reach the same degree of polymerization when using batch apparatus. An index is used to evaluate the course of the reaction, characterizing the depth of the polymerization of the initial mixture:

$$\left(\frac{dD}{dt}\right) = \frac{1}{\tau}\left(D_k - D_{k-1}\right) \qquad (2),$$

where D is the depth of polymerization of the monomers and is determined by the formula:

$$D_k = \frac{C_o - C_k}{C_o} = 1 - \frac{C_k}{C_o} \qquad (3),$$

Reactors for emulsion polymerization

where C is the concentration, t - the time, τ - the rated duration of the presence of the mixture in the battery, 0, k, k-1 the order indices of the reactors in the polymerization battery (Fig. 1). Equation (2) must be solved simultaneously with the function of the polymerization kinetics:

$$\left(\frac{dD}{dt}\right)_k = f(D) \qquad (4).$$

The solution of this equation may be graphical or analytical. However, the emulsion polymerization can only rarely be regarded as the only chain of reaction, the course of which is expressed by the kinetic equation usually of the zero order. In practice, the relationship of the polymerization depth to the time only partially approximates the given scheme. In that case the functional relationship has the following form:

$$\frac{dD}{dt} = k \qquad (5)$$

where k is the constant of the rate of the process. With n terms the equation is:

$$n = \frac{D_n}{k \cdot \tau} = \frac{D_n \cdot F}{k \cdot V}.$$

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A051/A129

Reactors for emulsion polymerization

The estimation of the required number of reactors in the polymerization battery is based on a number of assumptions: It is assumed that the reaction is isothermal; that the function of transfer is exponential in nature; that the data for the periodic polymerizers can be used for calculating the flow systems. Since the emulsion copolymerization of butadiene with styrene meets all these conditions, the data of batch polymerization are completely applicable to calculating the reactors of continuous polymerization. Using the graphical method, it is required to know the kinetic relationship as well as the initial and final conditions, the tg of the angle of decline of the active curves or their reciprocal value (rated holding time of the mixture in the reactor). Since the rate of the latex flow is given in advance, the duration of the mixture depends on the reactor volume in the battery. Since the reactions of polymerization differ from the reactions of the zero order with the reaction rates being the same and being a function of the concentration, the volumes of the reactors in the battery should be decreased and the number of reactors increased. The optimum capacity of the polymerization reactor should be 20 m^3. At a specific gravity of the ChKS-1 of 950 g/cm^2 and a working time of 8,000 hrs per year, the rate of flow of the latex is: $F = \frac{120,000}{8,000 \cdot 0.95} = 15.78$ m^3/hr, about 16 m^3/hr. The exact determination of the working volume of the boiler is

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difficult. It is usually considered to be 90% of the total capacity of the reactor. Then $V = 20 \cdot 0.90 = 18\ m^3$. The rated holding time of the mixture in the reactor is $= \frac{18}{16} = 1.125$ hrs, and the reciprocal value is $\frac{1}{} = 0.889\ (hrs)^{-1}$. Thus, if the polymerization is of the zero order, it can be brought to a depth of 60% in a battery of eight polymerization apparatus with a capacity of 20 m^3 each. Fig. 2 shows the graphical calculation of the required quantity of apparatus taking into account the kinetics of the process. When the polymerization depth is 60% for the given capacity, 9.3 apparatus are required. Taking into account a higher induction period, then 10 apparatus with a capacity of 20 m^3 each connected into a continuous battery are needed. Actually the holding time of the mixture is equal to $10 \cdot 1.125 = 11.25$ hrs. The duration of the continuous polymerization is even greater due to the absorption of the inhibitors. There is 1 diagram, 1 graph and 14 references: 3 Soviet-bloc, 11 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: Weber, Chem. Eng. Progr., 49, 26 (1953); Leclerc, Chem. Eng. Sci., 2, 213 (1953); Johnson, Thring, Pilot Plants, Mac Craw-Hill, 1958; Dankwerts, Chem. Eng. Sci., 2, 1 (1953).

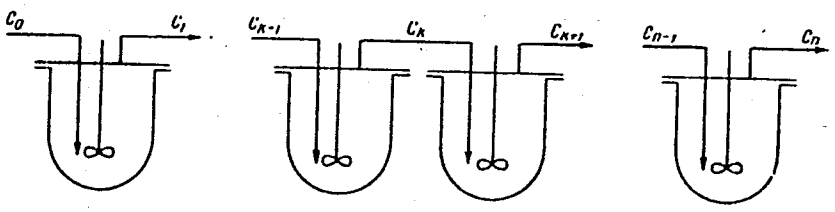
Card 5/7

Reactors for emulsion polymerization

S/138/61/000/005/003/006
A051/A129

ASSOCIATION: Nauchno-issledovatel'skiy institut syntеticheskogo kauchuka g. Gotval'dov, ChSSR (Scientific Research Institute of Synthetic Rubber, Gottwaldow, Czechoslovakia)

Fig. 1. Polymerization battery



Card 6/7

ULC. A.; BRABENEC, R.

"Introducing work in several shifts. p. 239"

SLEVARENSTVI. (Ministerstovo tezkeho strojirenstvi a Ceskoslovenska vedecka technicka spolecnost pro hutnictvi a slevarenstvi) Praha, Czechoslovakia, Vol. 3, No. 8 Aug. 1955.

Monthly List of East European Accessions(EEAI), LC, Vol. 8, No. 6 June 1959
Uncl.

AMBLER, Z.; ULC, M.; LEDINSKY, Q.

Aneurysm of the internal carotid artery in its extracranial course. Rozhl. chir. 44 no.9:667-669 S '65.

1. Neurologicke oddeleni Vojenske nemocnice v Plzni (nacelnik MUDr. M. Ulc), Neurochirurgicke oddeleni (vedouci MUDr. Q. Ledinsky, CSc.) a I. chirurgicke kliniky lekarske fakulty Karlovy University v Plzni (prednosta doc. dr. J. Spinka).

Industrial Medicine

CZECHOSLOVAKIA

CZ/0082/66/000/006/0402/0406

AUTHOR: Ulc, M. (Head, Doctor of medicine); Svacina, J.

ORG: Department of Neurology, Military Hospital, Plzen /Director: Dr. Medicine M. Ulc/ (Neurologicke oddeleni vojenske nemocnice); Department of Neurology UVN, Prague/ Director: Dr. Medicine F. Pleskot/ (Neurologicke oddeleni UVN)

TITLE: EEG shifts in personnel working around centimeter wave sources

SOURCE: Ceskoslovenska neurologie, no. 6, 1966, 402-406

TOPIC TAGS: microwave radiation, biologic effect, EEG, industrial medicine, central nervous system

ABSTRACT: A total of 115 radar technicians who had been working around 3—10-cm generators for an average of 3.7 years were given EEG examinations. Daily exposure duration for the technicians averaged 2 1/4 hrs and exposure power density was 0.2 mw/cm^2. EEG findings were normal in 31.2% of those studied, nearly normal in 55%, slightly abnormal in 9.5%, and definitely pathological in 4.2%. "Sleep activity" was observed in 28.1% of the cases. The radar technicians exhibited neurasthenic symptoms which corresponded to the EEG findings. Orig. art. has: 2 figures and 1 table.

[CD]

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CZECHOSLOVAKIA

ULC, M.; SVACINA, J.; Neurological Department, Military Hospital (Neurologicke Oddeleni Vojenske Nemocnice), Plzen, Head (Vedouci) Dr M. ULC; Neurological Department (Neurologicke Oddeleni) UVN [Abbreviation not explained], Prague, Head (vedouci) Dr F. PLESKOT.

"EEG Findings in Individuals Working with Radiowaves of Lengths in Centimeters."

Prague, Ceskoslovenska Neurologie, Vol 29, No 6, Nov 66, pp 402 - 406

Abstract [Authors' English summary modified]: EEG examination of 115 engineers working with waves of lengths of 3 to 10 centimeters for an average of 3.7 years is described. Daily exposure averaged 2½ hours, at an average intensity of 0.2 mW/cm sq. The EEG findings were normal in 31.2%, borderline in 55%, slightly abnormal in 9.5%, and clearly pathological in 4.2%. Sleep activity was found in 28.1%. Controls showed 63.6% normal and 26.5% borderline recordings. The clinical picture corresponded to neurasthenia. 2 Figures, 1 Table, 2 Western, 13 Czech, 2 Russian, 2 Polish references. (Manuscript received 9 Feb 66).

1/1

ULC, Miloslav, polplukovnik MUDr.

Considerations on the EEG examination of healthy subjects with special regard to their ability to drive motor vehicles. Voj. zdrav. listy 34 no.5:192-193 O '65.

1. Neurologicke oddeleni vojenske nemocnice v Plzni.

L 30933-66
ACC NR: AP6023133 SOURCE CODE: CZ/0060/65/000/005/0192/0193

AUTHOR: Ulc, Miroslav (Lieutenant colonel; Doctor of medicine)

ORG: Neurological Department, Military Hospital, Plzen (Neurologicke oddeleni vojenske nemocnice)

TITLE: Importance of electroencephalographic examination of healthy subjects in evaluating their ability to drive motor vehicles

SOURCE: Vojenske zdravotnicke listy, no. 5, 1965, 192-193

TOPIC TAGS: EEG, neurology, central nervous system, nervous system disease, military medicine

ABSTRACT: All subjects who are to become military drivers should be given a thorough neurological examination, including EEG. The EEG examination must be given to all men who suffered head injury or suffered from a disease affecting the CNS. The subjects who show a pathological EEG finding should not be allowed to drive, although they must not be designated as latent epileptics. [JPRS]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 002

UDC: 616.831-073.97-057:629.113.007

Card 1/1

ULCAR, JOZE

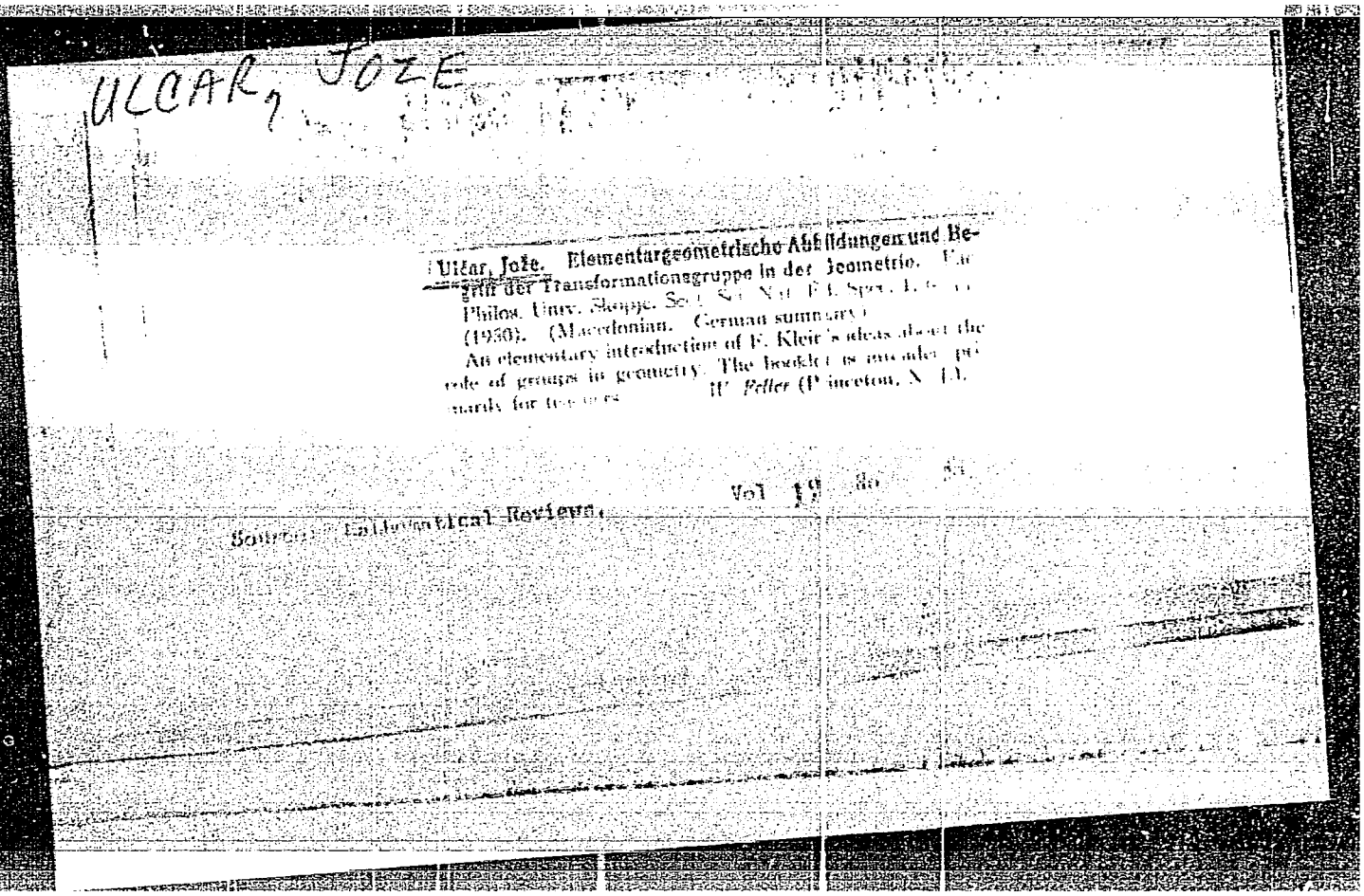
Geometry, differen

Ulčar, Jože. Eine geometrische Deutung der mittleren Krümmung. Fac. Philos. Univ. Skopje. Sect. Sci. Nat. Annuaire 2, 267–270 (1949). (Macedonian. Russian and German summaries)

To obtain the mean curvature, the author integrates the canonical representation $z(r,\theta)=\frac{1}{2}r^2[R_1^{-1}\cos^2\theta+R_2^{-1}\sin^2\theta]$ with respect to θ.

W. Feller (Princeton, N. J.).

Source: Mathematical Reviews, Vol. 12, No. 2



ULCAR, JOZE

Ulčar, Jože. Elementargeometrische Abbildungen und Begriff der Transformationsgruppe in der Geometrie. Fac. Philos. Univ. Skopje. Sci. Sect. Nat. Fil. Spec. [illegible] (1930). (Macedonian. German summary)

An elementary introduction of F. Klein's ideas about the role of groups in geometry. The booklet is intended pri- marily for [illegible]

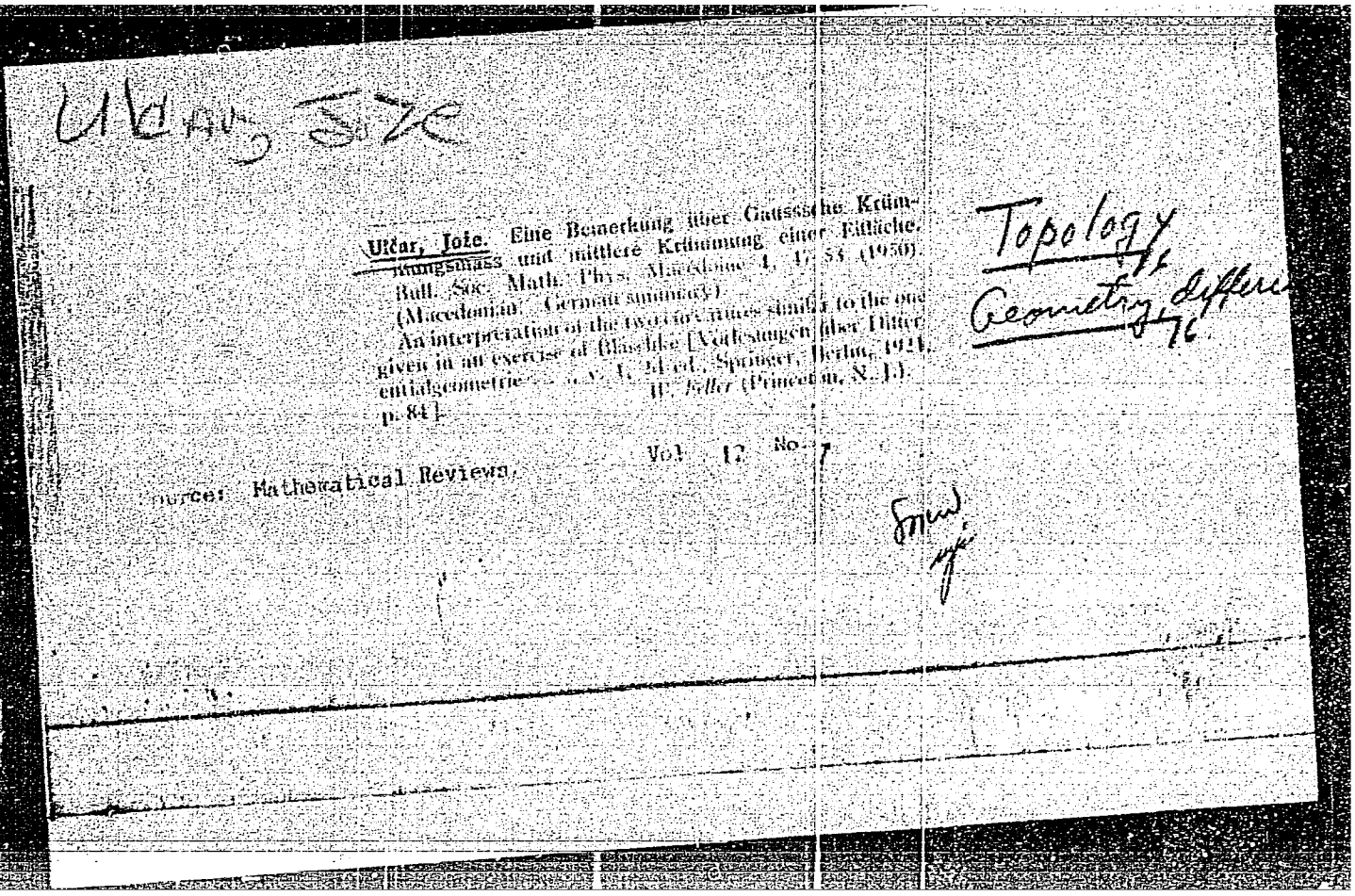
W. Feller (Princeton, N. J.).

Vol 19 No

Source: Mathematical Reviews

ULCAR, JOZE. Elementarno-geometriski preslikuvanja i grupen princip bo geometrijata. Skopje, 1950. 63 p. (Filozofski fakultet na univerzitetot, Skopje. Prirodno-matematicki oddel. Posebni izdanija, knj. 1) /Graphic presentation of elementary geometry and the concept of the transformation group in geometry, German summary. Footnotes/

SO: Monthly List of East European Accessions, L. C., Vol. 2, No. 7, July 1953, Uncl.



UNCLASS

Topology
Geometry, Differ
76

Ulčar, Jote. Eine Bemerkung über Gauss'sche Krümmungsmass und mittlere Krümmung einer Fläche. Bull. Soc. Math. Phys. Macédoine 4, 47–53 (1950). (Macedonian. German summary)

An interpretation of the two curvatures similar to the one given in an exercise of Blaschke [Vorlesungen über Differentialgeometrie ... v. 1, 3d ed., Springer, Berlin, 1924, p. 84].

Source: Mathematical Reviews, Vol. 12 No. 7

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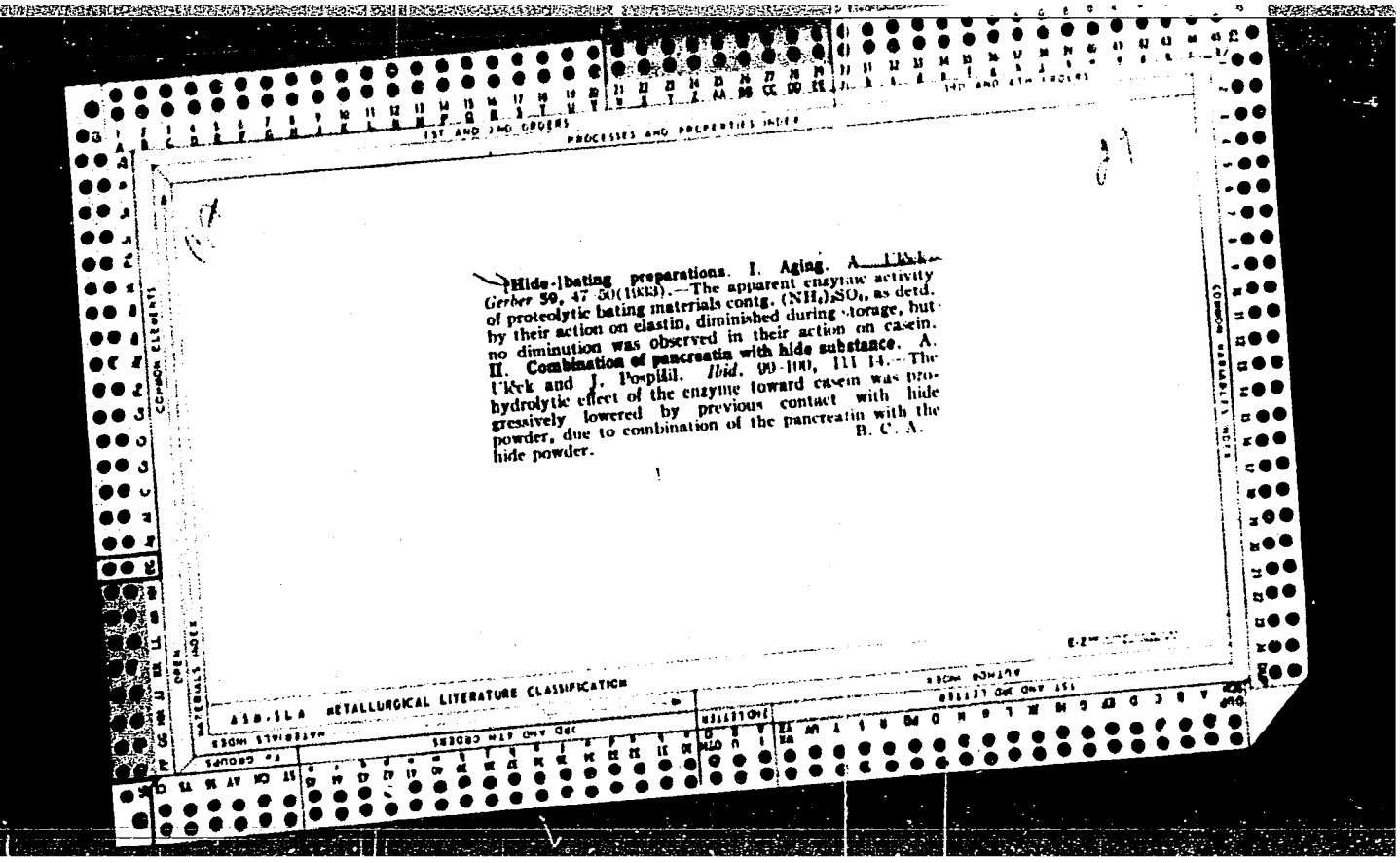


Hide-|bating preparations. I. **Aging.** A. Ulrich. *Gerber* **50**, 47–50(1933).—The apparent enzymic activity of proteolytic bating materials contg. $(NH_4)_2SO_4$ as detd. by their action on elastin, diminished during storage, but no diminution was observed in their action on casein. II. **Combination of pancreatin with hide substance.** A. Ulrich and J. Pospíšil. *Ibid.* 99–100, 111–14.—The hydrolytic effect of the enzyme toward casein was progressively lowered by previous contact with hide powder, due to combination of the pancreatin with the hide powder. B. C. A.

ULCENCO, N.

Technical scientific bases in the field of agricultural machine construction in Rumania. p. 117. Academia Republicii Populare Romine. ANALELE. Bucuresti. Suppl. to v. 3, 1955.

SOURCE: East European Accessions List (EEAL) Library of Congress. Vol. 5, no. 9, Sept. 1955

H

RUMANIA/Chemical Technology. Chemical Products and Their Applications. Chemical Processing of Natural Gases and Petroleum. Motor and Rocket Fuels. Lubricants.

Abs Jour : Ref Zhur-Khimiya, No 6, 1959, 20964

Author : Ulcenco, N.; Maris, I.; Frenkel M.; Stanescu, C., Dragutan, V.

Inst : -

Title : Comparative Tests of 413, 312 and State Specification-5304 Oils on KD-35 Tractor Engines.

Orig Pub : An Inst. cercetari mecaniz. si electrif. agric., 1958, 2, 164-178

Abstract : Oil (O) tests were conducted on KD-35 engines: bench-test idling for 1000 hours and use for 1600 hours. The hard-to-get

Card : 1/2

ULCENCO, N.

Technical scientific bases in the field of agricultural machine construction in Rumania

p. 117
Suppl. to v. 3, 1955
ANALELE
Bucuresti

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 5, no. 12 December 1956

KOSTYUSHKO, L.; UL'CHENKO, G.

Suggestions which save millions. NTO 2 no.7:43 Jl '60.
(MIRA 13:7)

(Technological innovations)

MEL'NIKOV, G.B., prof.; UL'CHENKO, Ye.M.

Zooplankton of the middle reaches of the Dnieper River in the Kremenchug-Dneprodzerzhinsk section in connection with the construction of the Dneprodzerzhinsk Hydroelectric Power Station. Vest. Dnep. nauch.-issl. inst. gidrobiol. 12:93-114 '60. (MIRA 14:12)

(Dnieper Valley--Zooplankton)

UL'CHIYEVA, M.

"Serp i Molot" plant. Metallurg 6 no.7:35-36 Jl '61. (MIRA 14:6)

1. Otvetstvennyy sekretar' redaktsii gazety "Martenoka" zavoda "Serp i molot."
(Moscow--Metallurgical plants)

UL'DANOV, G.A., assistent

Malginant tumors of the eye as revealed by the data from the eye clinic of the Kazakh Medical Institute and the Kazakh Institute of Eye Diseases for the past 20 years (1936-1955). Vest.oft. no.3:7-10 '61. (MIRA 14:9)

(EYE--CANCER)

UL'DANOV, G.A.; ZHIDIKHANOV, K.A., kand.med.nauk (Moskva)

Public health in Iraq. Sov. zdrav. 20 no.12:75-77 '61.
(MIRA 15:6)

1. Iz otdela vneshnikh snosheniy Ministerstva zdravookhraneniya SSSR.

(IRAQ--PUBLIC HEALTH)

UL'DANOV, G.A., kand. med. nauk

Primary melanosarcoma in the atrophied eye. Vest. oft. 76 no.3:52-55 My-Je '63. (MIRA 17:2)

1. Kafedra glaznykh bolezney (zav. - prof. V.P. Roshchin) Kazakhskogo meditsinskogo instituta.

ULEDOV, A., kand.filosofskikh nauk

Moral code of the builders of communism. Komm.Vooruzh.Sil 2 no.20:21-29 O '61. (MIRA 14:9)
(Communist ethics) (Military discipline)

[redacted], L'DRIKH, I. [Uldrich, I.]

Local treatment of specific ulcerous systitis with guaiazulene.
Urologiia 28 no.2:51-52 Mr-Ap'63. (MIRA 16:6)

1. Iz Nauchno-issledovatel'skogo instituta tuberkuleza v Prage (dir. - dotsent R.Krzhivinka).
(BLADDER—ULCERS) (GUAIAZULENE)

ULDRICH, Josef, MUDr

Autonephrectomy in advanced tuberculosis of the kidneys. Rozhl.chir. 34 no.1-2:109-112 F '55.

1. Urolog. oddel. fakultni nemocnice II v Praze II (prednosta Doc. Dr V.Paces)
(KIDNEYS, diseases
tuberc., advanced, autonephrectomy)

ULDRICH, Josef, MUDr.

Urogenital tuberculosis. Prakt. lek., Praha 35 no.15-16: 354-356 20 Aug 55.

1. Z Vyzkumneho ustavu tuberkulosy v Praze 8--Bulovka, reditel ustavu: doc. MUDr. Rudolf Krivinka.
(TUBERCULOSIS, UROGENITAL)

ULDRICH, Josef, MUDr.

Tuberculosis of the urinary bladder. Rozhl. chir. 35 no.1:27-30 Fe 56.

1. Vykumny ustav tuberkulosy v Praze VIII-Bulovka (prednost doc. MUDr Rudolf Krivinka). Tuberkulosni lecebna na Plesi (reditel MUDr Josef Ungr, urologicky konsiliar MUDr Josef Uldrich).
(TUBERCULOSIS, UROGENITAL
bladder (Cz))

PAVLANSKY, R.; PLIHAL, V.; ULDRICH, J.

Paraarticular ossification & nephrolithiasis complicating basilar meningitis after tuberculous epididymitis. Cas. lek. cesk. 97 no.41: 1299-1303

1. Vyzkumny ustav tuberkulosy v Praze, reditel doc. dr. R. Krivinka, Ortopedicke oddeleni nemocnice v Praze 8-Bulovka, prednosta dr. R. Pavlansky, R. P., Praha-Bulovka.

(MENINGITIS, compl.
nephrolithiasis & paraarticular ossification of hip complicating basilar meningitis after tuberc. epididymitis (Cz))
(KIDNEYS, calculi
complicating basilar meningitis after tuberc. epididymitis (Cz))
(HIP, dis.
ossification, paraarticular, complicating basilar meningitis after tuberc. epididymitis (Cz))
(EPIDIDYMITIS, compl.
basilar meningitis complicated by nephrolithiasis & paraarticular ossification of hip after tuberc. epididymitis (Cz))
(TUBERCULOSIS, MALE GENITAL, compl.
same)

ULDRICH, Josef (Praha-Hradcany, Gogolova 2.)

Exudative pleuritis & tuberculosis of the urogenital tract. Rozhl. chir. 37 no.5:336-338 May 58.

1. Vyzkumny ustav tuberkulosy v Praze VII - Bulovka, reditel doc. dr. R. Krivinka.

(TUBERCULOSIS, UROGENITAL, compl.
pleurisy with effusion (Cz))
(PLEURISY, compl.
urogenital tuberc. in pleurisy with effusion (Cz))

KURTI, V.; ULDRICH, J.

Effect of azulenes on Myobacterium tuberculosis & their use in the local treatment of tuberculous cystitis. Cas. lek. cesk. 97 no.3: 67-70 Jan 58.

1. Vyzkumny ustav tuberkulosy v Praze, red. doc. Dr R. Kravinka.
V. K., Praha-Bulovka, Vyzkumny ustav tuberkulosy.
(TUBERCULOSIS, UROGENITAL, ther.
1, 4-dimethyl-7-ethylazulene & 1, 4-dimethyl-7-isopropy-lazulene in tuberc. cystitis, eff. on isoniazid & PAS resist. M. tuberc. (Cz))
(CYCLOPARAFFINS, ther. use
same) (Cz))
(CYSTITIS, etiol. & pathogen.
tuberc., ther., 1, 4-dimethyl-7-ethylazulene & 1, 4-dimethyl-7-isopropylazulene, eff. on isoniazid & PAS resist. M. tuberc. (Cz))

ULDRIKH, Ioze [Uldrich, J.] (Praga)

Urogenital tuberculosis in young men. Khirurgiia (Sofiia) 16 no.12: 1055-1060 '63.

1. Sanatorium za tuberkuloza "Procecnice" pri Praga.

NOVACEK, A.; ULDRICH, M.; STEJSKAL, F.

Steroid hormones. I. 3β-acetoxy-Δ5,16-pregnandiene-20-one (dehydropregnenalone acetate). Cesk. farm 11 no.4:178-181 '62.

1. Chemopharma, n.p., Usti nad Labem.
(PREGNENALONE rel cpds)

UL'DZHABAYEV, T.

[Report of the Central Committee of the Communist Party of Tajikistan to the 11th Congress of the Communist Party of Tajikistan] Otchetnyi doklad TSentral'nogo Komiteta Kommunisticheskoi partii Tadzhikistana XI s"ezdu Kompartii Tadzhikistana. Stalinabad, Tadzhikgosizdat, 1958. 79 p. (MIRA 12:3)
(Tajikistan--Economic conditions)

UL'DZHABAYEV, T.

Resolutions of the 21st Congress of the CPSU and tasks of the finance organs of Tajikistan. Fin. SSSR 20 no.7:8-13 Jl '59. (MIRA 12:11)

1. Pervyy sekretar' TSentral'nogo komiteta Kommunisticheskoy partii Tadzhikistana.

(Tajikistan--Finance)

MUKHAMEDZHANOV, M.V.; UL'DZHABAYEV, T.U.; MAMEDOV, M.T.; RODICHEV, S.D.; FIRSOV, B.P. Prinimali uchastiye: PROTASOV, P.V.; POLEVSHCHIKOVA, V.N.; MAL'TSEV, A.M. PEVZNER, L.I., red.; BONDARENKO, M., red.; BAKHTIYAROV, A., tekhred.

[On cotton plantations of the U.S.A.] Na khlopkovykh plantatsiiakh SShA. Tashkent, Gos.izd-vo Uzbekskoi SSR, 1959. 172 p. (MIRA 13:10)

(United States--Cotton growing)

COSTACHEL, A., conf. ing.; ULEA, E., sef lucr. ing.; NEAMTU, M., asist. ing.

Principles and norms involved in the compensation methods of traverses and polygonal, leveling networks. Rev geodezie 7 no.3:18-30 '63.

1. Institutul de constructii, Bucuresti.

COSTACHEL, A., conf. ing.; ULEA, E., ing.; NEAMTU, M., ing.

Contributions to the direct measurement of distances, of medium precision, with metallic overhead tapes and threads. Pt 1. Metrologia apl 10 no.11:481-489 N 63.

COSTACHEL, A., conf. ing.; ULEA, E., ing.; NEAMTU, M., ing.

Contributions to the direct measurement of distances, of medium precision, with overhead metallic bands and threads. Pt.2. Metrologia apl 10 no.12:529-535 D '63.

RUMANIA / Cultivated Plants. Fruits, Berries. M-7

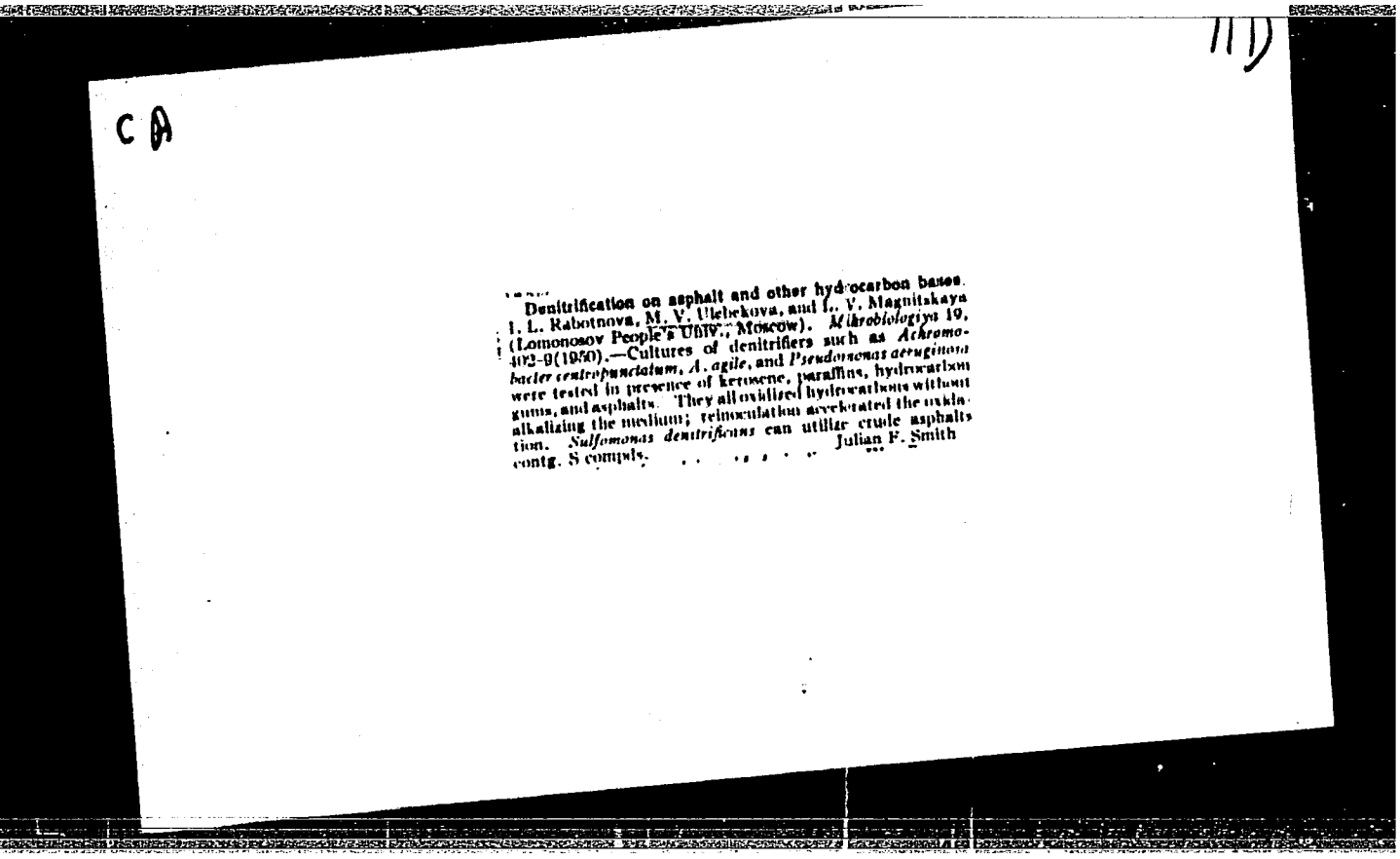
Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58767

Author : Uleatovschi, V.
Inst : School of Viniculture in Minis (RPR)
Title : Some Observations on Wildings on the Minis Vineyard

Orig Pub : Gradina. via si livada, 1957, 6, No 8, 30-33

Abstract : Observations conducted in the vineyard of the school of viniculture in Minis (RPR) showed that the percentage of whithering of shrubs varied in 20 varieties of grape grafted on 3 different wildings. The lowest percentage of whithering of shrubs (4%) was observed in the case of the Mystoasa de Mederat variety grafted on the Riparia Gloar wilding. The highest percentage was found in the case of the Black Coarna variety grafted on the Riparia x Rupestris 101-14 wilding. It is recommended to utilize the Berlandieri x Riperia Teleki for the

Card 1/2



CA

111

Denitrification on asphalt and other hydrocarbon bases. I. L. Rabotnova, M. V. Ilichekova, and L. V. Magnitskaya (Lomonosov People's Univ., Moscow). *Mikrobiologiya* 19, 402-9(1950).—Cultures of denitrifiers such as *Achromobacter centropunctatum*, *A. agile*, and *Pseudomonas aeruginosa* were tested in presence of kerosene, paraffins, hydrocarbons gums, and asphalts. They all oxidized hydrocarbons without alkalizing the medium; reinoculation accelerated the oxidation. *Sulfomonas denitrificans* can utilize crude asphalts contg. S compds. Julian F. Smith

18(7), 28(2)

AUTHOR: Ulegin, V. G. SOV/115-59-8-9/33

TITLE: The Accuracy of Test Machines for Stretching and Compressing of Metals

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 8, pp 22 - 24 (USSR)

ABSTRACT: The author investigated the accuracy of machines used for stretch and compression tests of metals. The basic characteristics of one and the same metal may be obtained with considerable differences on recorded diagrams, depending upon the test conditions, especially on the relative deformation speed of the specimen under investigation and the flywheel inertia. The rigidity of the system "specimen - test machine" is one of the factors influencing the relative deformation speed of the specimen and the inertness of the test machine. The author states that the rigidity coefficient P_n/W_n provides the possibility of judging the accuracy and reliability of the basic characteristics which are to be recorded on diagrams and the practicability of the test machine under in-

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vestigation. He describes a device, shown in Figure 2, which was used for a systematic investigation of the influence of the rigidity. This device consists of a press, a traction link and a hydraulic dynamometer DPM. The drift was measured with a device, shown in Figure 3. The error arising because of the inertia of machine components, especially the flywheel, was measured by a rheochord, amplifier and oscilliograph, as shown in Figure 4. With these three devices it was established that the basic mechanical characteristics of specimens should not be compared if the diagrams were recorded on different types of static test machines. When designing test machines, the rigidity and inertia must be taken into consideration. According to test results, the accuracy of existing test machines changes from 0 to 65% of the value to be measured, depending on inertness, rigidity, load and other factors. There are 3 diagrams and 1 graph.

28 (5)

AUTHOR: Ulegin, V. G.

05747
SOV/32-25-10-36/63

TITLE: The Influence of the Rigidity of Machines Upon the Results of Tests of Machines With Respect to Extension and Compression

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, pp 1242 - 1245 (USSR)

ABSTRACT: Practice showed that different types of machines have different rigidity, which, besides, varies according to stress. For the quantitative determination of the rigidity of static machines a device (Fig 1) was constructed, which contains a piston press and a drawgear of a hydraulic dynamometer of the type DPM. The deformation of the machine was determined by means of indicators in the case of stresses caused by the drawgear operated by means of a piston press, while the stress itself was measured by means of a manometer. The tests were carried out on parts of the machines of the type R-5, IM-12A, SZBD-20, and ZDM-30, and the variation of rigidity with stress was graphically shown (Fig 2). The influence exercised by the rigidity of the machine upon the test results was investigated, for which purpose a machine with low moment of inertia (Fig 3) was used. Tests carried out with 605 samples of annealed steels of the types St. 2 and St. 4

Card 1/3

showed (Fig 4) that the rigidity of the machine does not influence the lower flow limit and the strength, that, with an increase of rigidity, the proportional limit and the upper flow limit increase, while the true tear resistance decreases. The error caused by the inertia of individual machine parts was determined by means of a rheochord amplifier of the type 8ANCh7M and of oscillographs of the type 9S0-220; it was found that a rigid machine reproduces the mechanical characteristic values more precisely. When constructing the machine, care must be taken that a nominal relative deformation velocity be warranted for samples of all dimensions. In steel tests this velocity should amount to a minimum of $5 \cdot 10^{-5}$ 1/second in the elastic zone and to a maximum of 10^{-3} 1/second in the zone of flow. The deformation rate of the sample is to be laid down in the GOST standard. There are 4 figures and 10 references, 6 of which are Soviet.

The Influence of the Rigidity of Machines Upon the Results of Tests of Machines With Respect to Extension and Compression

05747
SOV/32-25-10-36/63

ASSOCIATION: Nauchno-issledovatel'skiy i konstruktorskiy institut ispytatel'nykh mashin, priborov i sredstv izmereniya mass (Scientific Research- and Designing Institute of Testing Machines, Devices, and Means of Mass Determination)

Card 3/3

ULEGIN, V. G., Cand Tech Sci -- (diss) "Rigidity of metal-testing machines as to elongation and compression and its effect on the results of testing." Moscow, Metallurgy Publishing House, 1960. 27 pp; with charts; (All-Union Correspondence Polytechnic Inst); 150 copies; free; (KL, 22-60, 139)

ULEGIN, V.G.

Hardness control in automatic and continuous production lines. Izm. tekh. no.9:20-22 S '63. (MIRA 17:1)

ULEGIN, V.G., kand. tekhn. nauk

Devices for the measurement and control of hardness of intermediate and finished articles in automatic and line production. Avt. prom. 29 no.8:40 Ag '63. (MIRA 16:11)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut.

ULEGIN, V.G., kand.tekhn.nauk

Using the impression method in testing hardness in automatic and continuous production lines. Avt.prom. 29 no.10:33-34 O '63. (MIRA 16:10)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut.

ULEGLA, IVAN

AUTHOR: Ulegla, Ivan

56-2-22/47

TITLE: Note on Anomalous Equations for Particles with Spin 1/2. (Anomal'nyye uravneniya dlya chastits so spinom 1/2)

PERIODICAL: Zhurnal Eksperim. i Teoret.Fiziki,1957,Vol. 33,Nr 2(8),pp.473-477 (USSR)

ABSTRACT: The present paper deduces irreducible wave equations for particles with spin 1/2 which differ from DIRAC-'S equations. The author starts out from the representation D_R for the maximum spin value 3/2 and shows, that anomalous equations exist for particles with spin 1/2. The simplest of these equations is the equation by PETRASH. The relativistic form of the anomalous wave equation: If the equations $(\beta^k \partial_k - i\varkappa)\varphi=0$ are covariant, then the matrices β_k must satisfy the well known relations. $[\beta_k I_{lm}] = g_{kl}\beta_m - g_{km}\beta_l$; $[I_{kl}I_{mn}] = - g_{km}I_{ln} + g_{lm}I_{kn} + g_{kn}I_{lm} - g_{ln}I_{km}$; $\beta_j Z = Z\beta^j$; I_{kl} denoting infinitesimally small rotations, and Z the matrix of reflexion in space. Relativistic wave equations with spin 1/2,which are different from DIRAC's equations can exist in principle. In this case they are said to be anomalous, because the state with spin 1/2 is not realized. (Although the start was made from the representation D_R for maximum spin 3/2). The states with spin 3/2 are excluded by the condition 1=0. These anomalous equations read in spin-tensor-form than $-\sum_{\mu=1}^{5} r_\mu(\partial^k \chi^{(\mu)} + \gamma^l \gamma^k \partial_l \chi^{(\mu)}) = \varkappa B^k$, $(1/2)S_\mu \partial_k B^k$-

Card 1/2

Note on Anomalous Equations for Particles with Spin 1/2. 56-2-22/47

$-ik_\mu \beta^k \partial_k \chi^{(n)} = \varkappa \chi^{(n)}$, $\chi^{(n)}$ denoting DIRAC's spinors, B^k the spinvector introduced by RARITA and SCHWINGER β^k the usual matrices by DIRAC. The anomalous equations for particles with spin 1/2 with eigenmass: Between the coefficients of the matrix α certain relations can be chosen, so that the charge density is positive definite. Thisproblem is discussed in the rest system of the particle. The next chapter deals withthe equations of particles with spin 1/2 and several eigenmass. The electromagnetic interaction can be introduced into these anomalous equations in the usual manner. There are no figures and no references.

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

SUBMITTED: February 2o, 1957

AVAILABLE Library of Congress.

Card 2/2

ULEGLA, I. (Praga)

History of the watch paradox and space flights. Vop.ist.est.i tekh. no.12:184-189 '62. (MIRA 15:4)
(Space and time) (Relativity (Physics))

S/269/63/000/001/032/032
A001/A101

AUTHOR: Ulegla, I.

TITLE: The history of clock paradox and space journeys

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 1, 1963, 83, abstract 1.51.565 (In collection "Vopr. istorii yestestvozn. i tekhn. no. 12, M., AN SSSR, 1962, 184 - 189)

TEXT: The author maintains that the question about the existence of an objective difference in clock run during space journeys with velocities of the order of light velocity "has not as yet finally clarified", because the non-uniformity in rocket motion was taken into account either approximately (RZhFiz, 1962, 9A218) or incorrect (RZhFiz, 1959, no. 4, 7297). Author's calculations lead him to the conclusion that "time in systems moving non-uniformly with a velocity higher than 0.7 c flows faster than in inertial systems"(i.e., acceleration, rather than retardation, of the time flow takes place), and only at lower velocities, the passenger of a rocket will be younger upon his return than people of the same age remaining on the Earth.

V. S.

[Abstracter's note: Complete translation]

Card 1/1

ULEHLA, L.

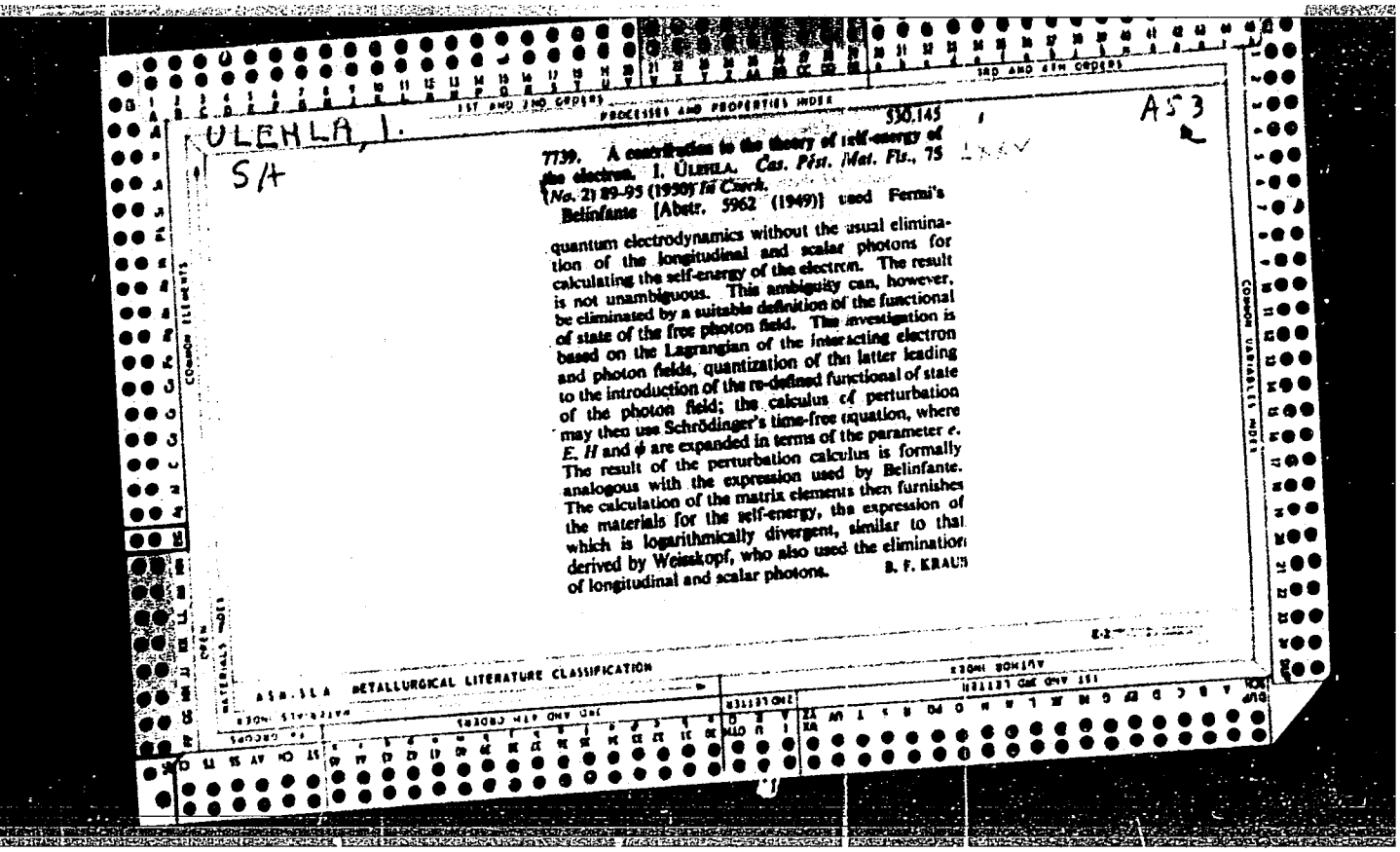
Model of a nucleon in the nucleus. I. p. 1. (Ceskoslovensky Casopis Pro Fysiku. Vestnik. Vol. 7, no. 1, 1957.)

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

ULEHLA, IVAN

Olehla, Ivan. Quantum mechanics of elementary particles

Source: Mathematical Reviews, Vol 17 No. 7



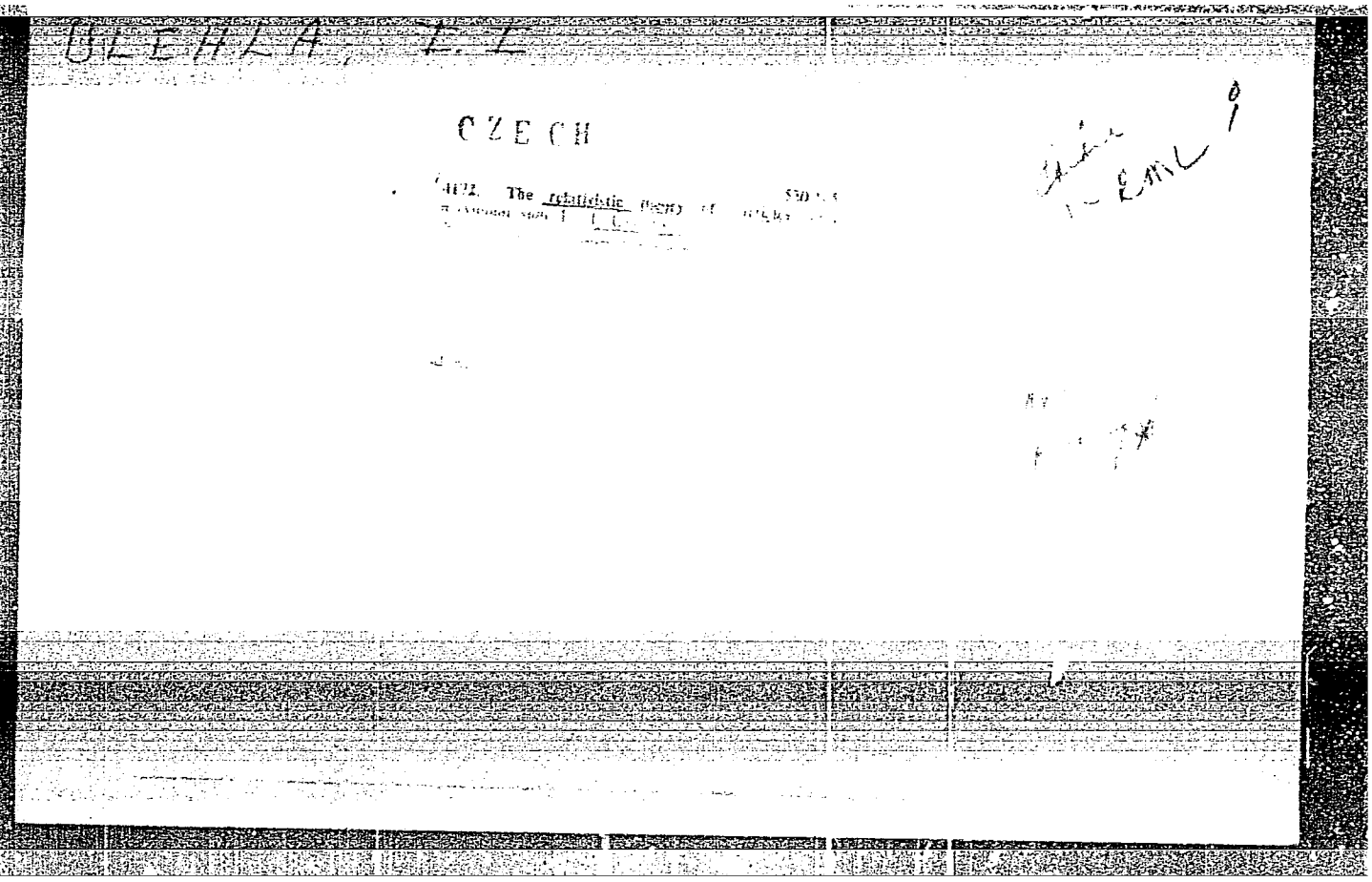
ULEHLA, I.
S/4

530.145 A53

7739. A contribution to the theory of self-energy of the electron. I. ÚLEHLA. *Čas. Pěst. Mat. Fys.*, 75 (No. 2) 89-95 (1950) *In Czech.*

Belinfante [Abstr. 5962 (1949)] used Fermi's quantum electrodynamics without the usual elimination of the longitudinal and scalar photons for calculating the self-energy of the electron. The result is not unambiguous. This ambiguity can, however, be eliminated by a suitable definition of the functional of state of the free photon field. The investigation is based on the Lagrangian of the interacting electron and photon fields, quantization of the latter leading to the introduction of the re-defined functional of state of the photon field; the calculus of perturbation may then use Schrödinger's time-free equation, where E, H and ϕ are expanded in terms of the parameter e. The result of the perturbation calculus is formally analogous with the expression used by Belinfante. The calculation of the matrix elements then furnishes the materials for the self-energy, the expression of which is logarithmically divergent, similar to that derived by Weisskopf, who also used the elimination of longitudinal and scalar photons.

B. F. KRAUS



CZECH

1972. The [illegible]

530.145

6251. Quantum mechanics of mesons with spin zero and one. [illegible] Czech. J. Phys., 3, 261-6 (Nov., 1953) In Russian.

This paper applies relativistic quantum mechanics to the derivation of the "Zitterbewegung" of a free meson having spin zero and one. I. Introduces into relativistic quantum mechanics the commutation rules for the operators of the co-ordinates q^r ($r = 1, 2, 3$) and the moments p^r and the equation of motion. It is assumed that the Hamiltonian for a particle with a single self mass will be of the form suggested by Dirac. In order to arrive at equations for particles other than electrons the operator equation, which should be satisfied by the operator H, is replaced by the more general condition. It is further assumed that the spin is given by the vector product with the "velocities" q^r. II. The algebra is determined of the operators α^r ($r = 0, 1, 2, 3$) occurring in the expression for the Hamiltonian. The equations result in two solutions: in equations for electrons and in equations for mesons with spin zero and one. For the second case, which is dealt with below, a relation is given between the elements α^r and the Duffin–Kemmer matrices β^r ($\beta^0 = \alpha^0$, $\beta^r = \beta^0\alpha^r + \alpha^r\beta^0$). III. Deals with the determination of the characteristic values of the spin operator and with the integration of the equations of motion. Integrating gives for the operators q^r the expressions in which the first two terms correspond to the classical relation between velocity and momentum, and the second two are "oscillating" at high frequency and amplitudes, which are of the order of Compton's wavelength. The character of "oscillations" for a free meson differs from that of a free electron.

ULEHLA, IVAN

2

CZECH

Ulehla, Ivan. On the theory of the equations for particles with a single spin 3/2 and with a single proper mass. I - F/W

Mat.-Fyz. Casopis. Slovensk. Akad. Vied 4, 11–27 (1954). (Czech, Russian summary)

The author has developed a formalism for the treatment of particles with maximum spin 3/2 in a previous paper [see the preceding review]. The conditions are now specified and discussed which one has to impose upon the β-matrices if the wave equation is to describe particles of spin 3/2 and of a single mass value only. It is shown that one can distinguish α-matrices of the following types: $\alpha(3, 2, 1)$, $\alpha(3, 2, 2)$, $\alpha(3, 1)$, $\alpha(3, 2)$, $\alpha(3)$; the numbers in parenthesis indicate that sub-matrices of third, second, and first order are contained in the matrix α. A matrix of the type $\alpha(3, 1)$ is given which fulfills the conditions for single spin 3/2 and single proper mass. The interaction with the electromagnetic field is introduced in the usual way by adding the term $e\varphi_4$ to the operator $i\partial/\partial x_4$. For the gyromagnetic factor the value $g=2/3$ is obtained in non-relativistic approximation. It is suggested that the μ-meson could be a particle of this type.

E. Gora (Providence, R. I.).

ULEHLA, I.

"Reciprocal Relationship Between Matter and Energy." p. 45, (MATEMATICKO-FYZIKALNY CASOPIS, Vol. 4, No. 2, 1954, Bratislava, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4 No. 5, May 1955, Uncl.

ULEHLA, IVAN

CZECH I-F/W

Úlehla, Ivan. Relativistic wave equations for particles with spin 3/2. Čehoslovack. Fiz. Ž. 4, 101–109 (1954). (Russian. English summary)

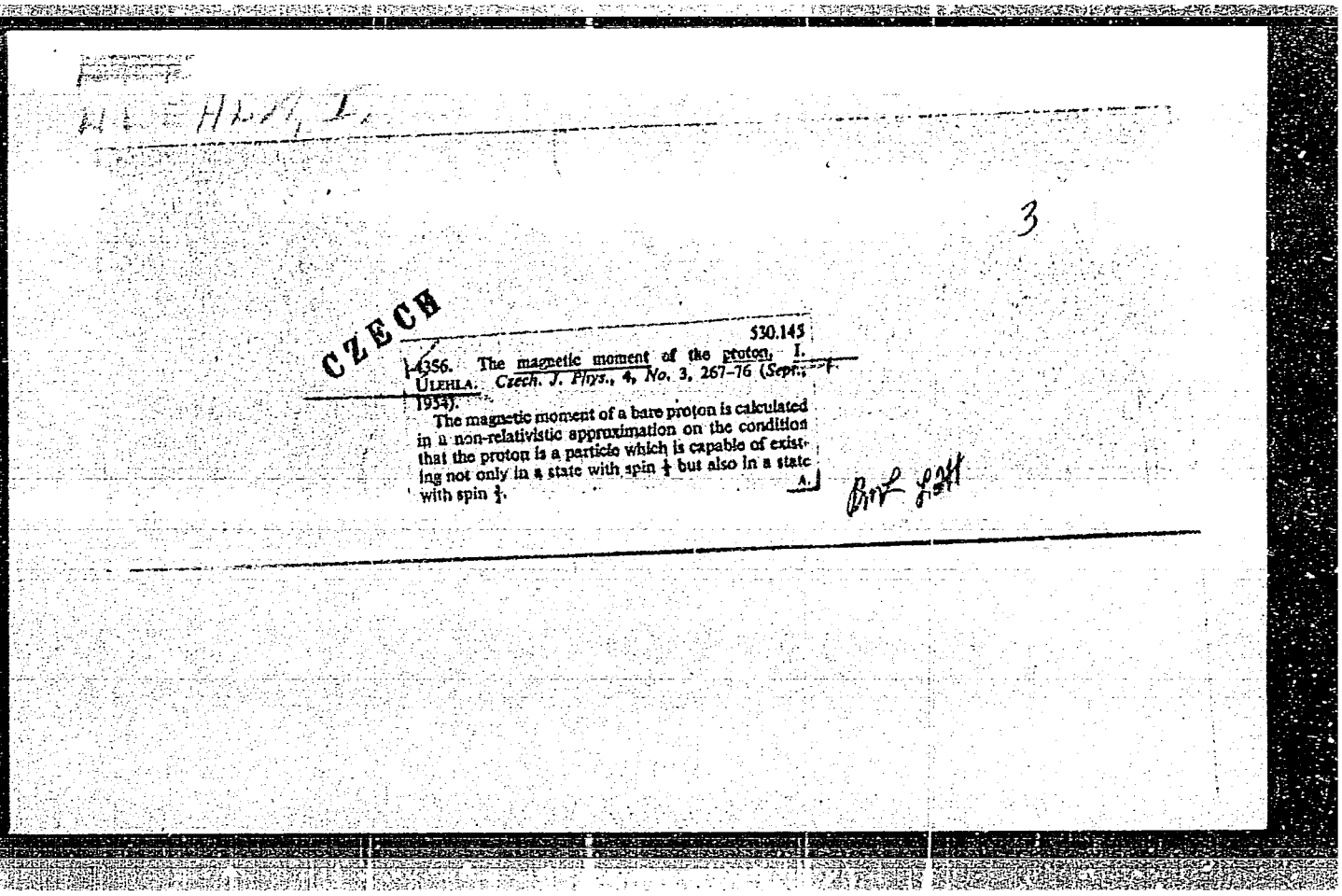
The algebra of the linearized wave equations

$$\beta^j \partial\phi/\partial x_j - i\mu\phi = 0$$

describing particles of maximum spin 3/2 is developed in considerable detail. It is shown that the matrices β_j can be represented as matrix products of the form $\gamma_j \times \alpha_j$, where γ_j are the Dirac matrices; the matrices α_j are reducible; each sub-matrix (there may be six of them) contains as multiplicative factor a complex number which can be chosen arbitrarily. One of the sub-matrices is the unit matrix; if only the multiplicative factor of this sub-matrix is assumed to be different from zero, the formalism reduces to Dirac's theory of the particle of spin 1/2. In the general case, the

wave functions have 24 components, and represent particles which may have spin 3/2 or 1/2, and four different mass values. The latter are given in the form μ/α_i, where α_i is a simple algebraic function of the multiplicative factors. The possibility of applying the formalism in the theory of the elementary particles, for instance for the description of μ-mesons and of excited states of nucleons, is discussed.

E. Gora (Providence, R. I.).



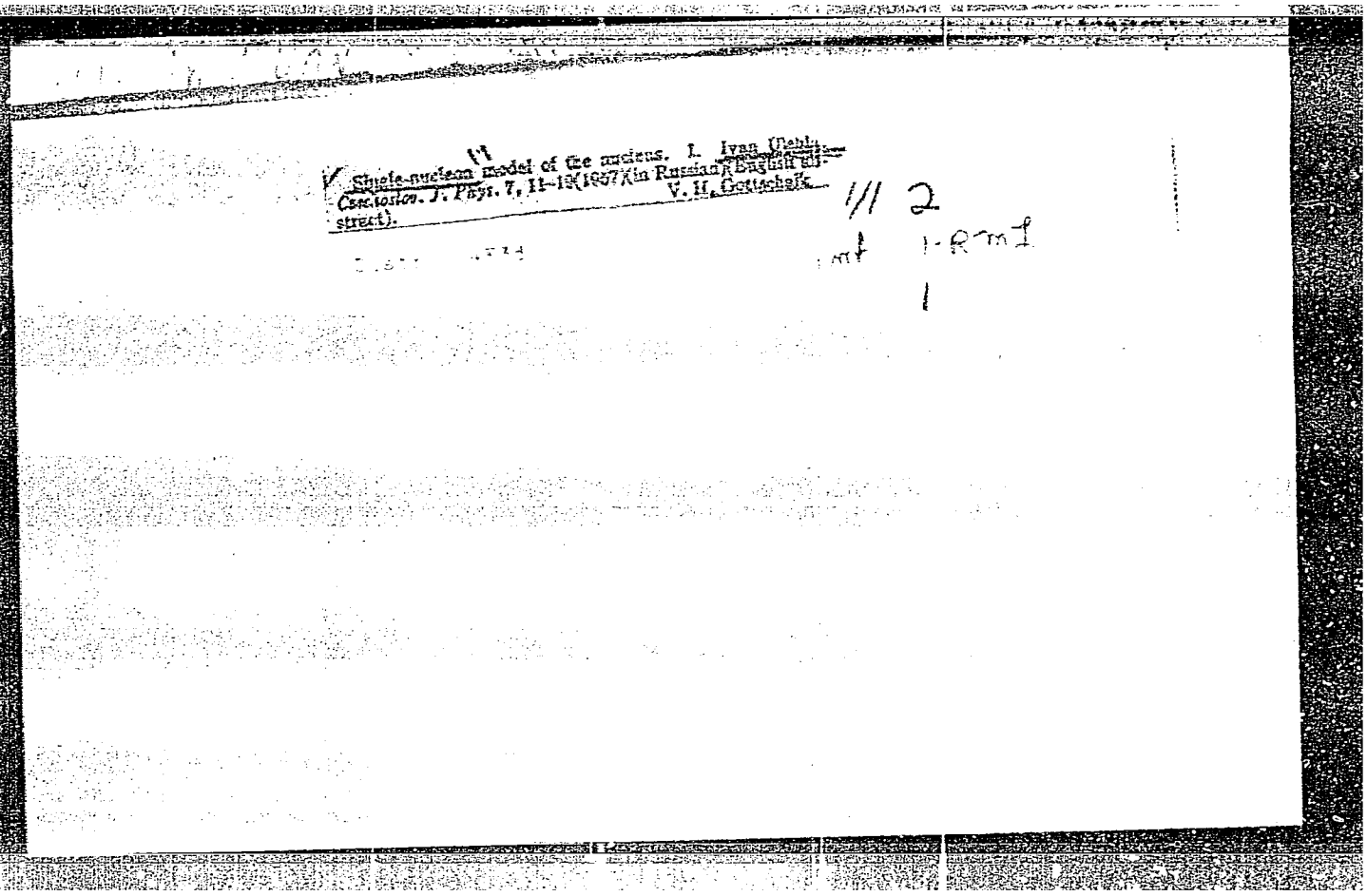
3

CZECH

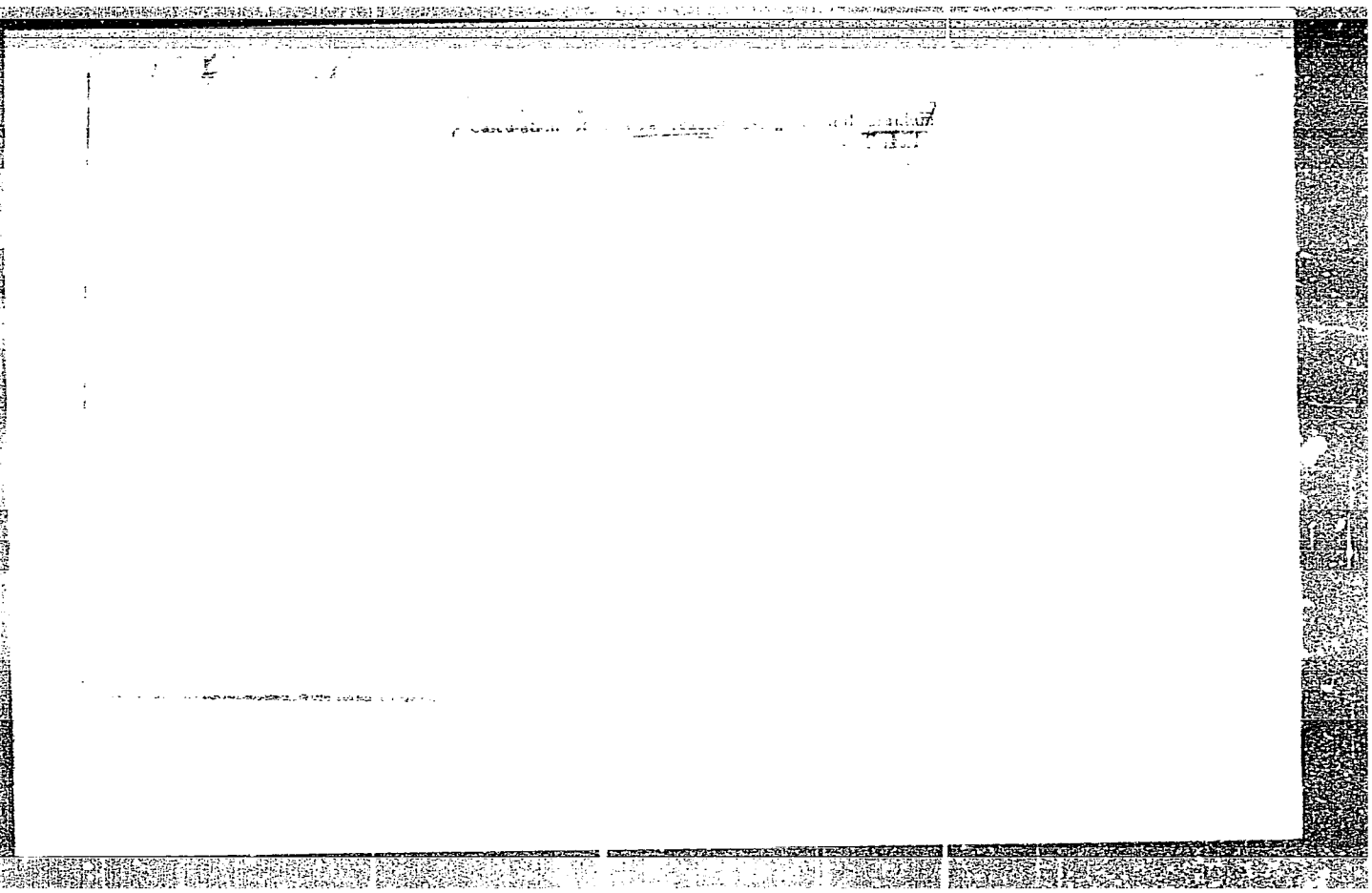
530.145

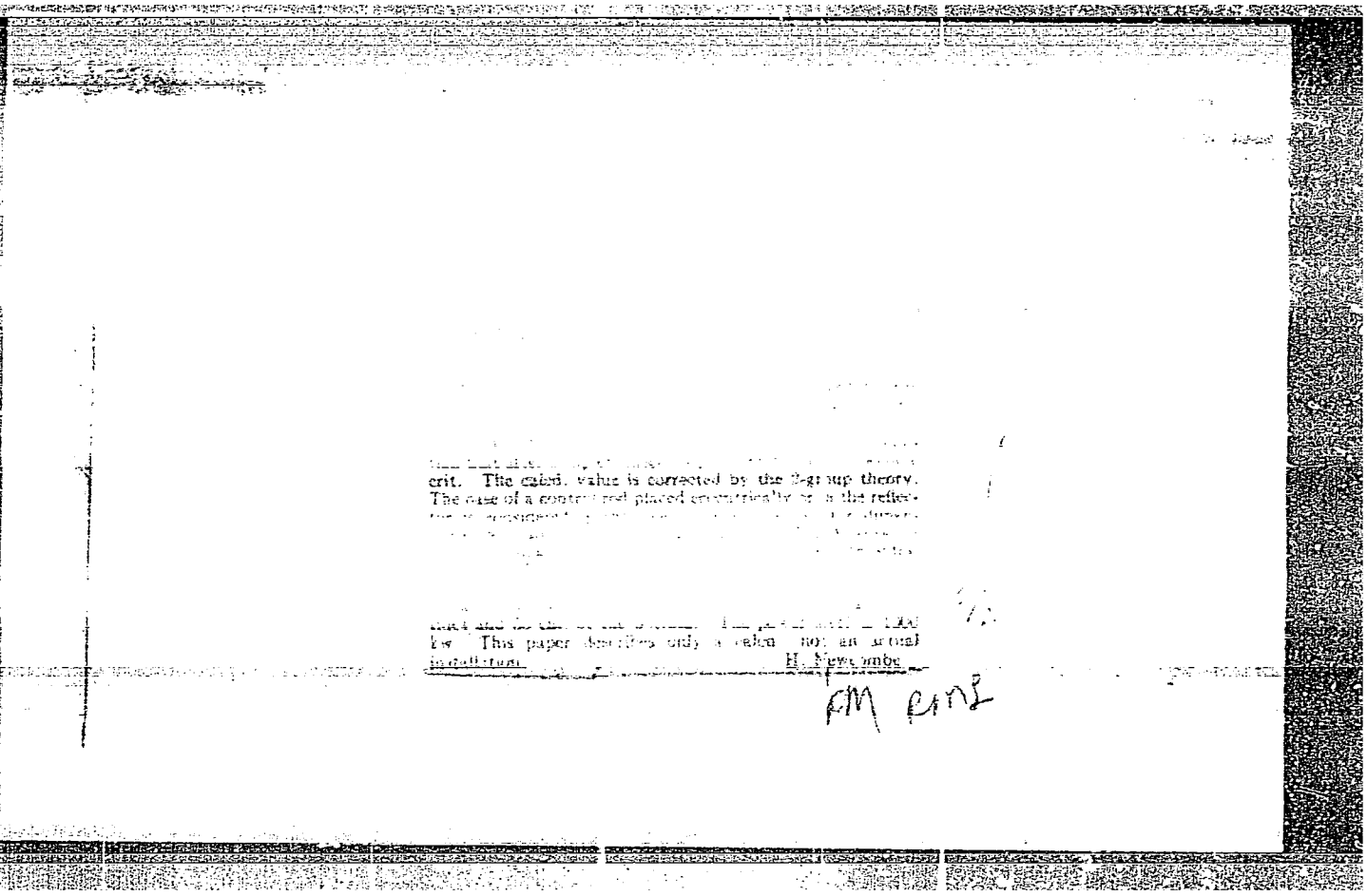
1-4356. The magnetic moment of the proton, I. ULEHLA. *Czech. J. Phys.*, 4, No. 3, 267–76 (Sept., 1954).

The magnetic moment of a bare proton is calculated in a non-relativistic approximation on the condition that the proton is a particle which is capable of existing not only in a state with spin $\frac{1}{2}$ but also in a state with spin $\frac{3}{2}$. A.



Shell-nucleon model of the nucleus. I. Ivan (Deb.) Communication. J. Phys. 7, 11-18(1957)(in Russian; English abstract). V. H. Gottschalk





crit. The calcd. value is corrected by the 2-group theory. The case of a control rod placed eccentrically or in the reflec-

This paper describes only a calcn not an actual

H. Newcombe

AM CNL

UIEHLA, Ivan

International conference on elementary particles in Venice.
Jaderna energie 4 no.1:26-27 Ja '58.

1. Spojeny ustav pro jaderny vyzkum, Dubna, SSSR.

ULEHLA, I.

SCIENCE

Periodicals: CESKOSLOVENSKY CASOPIS PRO FYSIKU. Vol. 8, no. 4, 1958

ULEHLA, L. The decay of meson π and its relation to the decay of neutron and meson μ. p. 395.

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

CZ/38-60-1-4/24

AUTHOR: Ulehla, I.

TITLE: International Conference on Physical Properties of Nuclear Energy.

PERIODICAL: Jaderná Energie, 1960, No. 1, p. 8

TEXT: This is a report on the 9th International Conference on Physical Properties of Nuclear Energy, which was held in Kiev between July 15 and July 25. It was attended by over 300 scientists from 34 countries.

Card 1/1

Z/028/60/000/005/003/003
D255/D304

3,2400

AUTHOR: Ulehla, Ivan (Prague)

TITLE: Will time expand and contract in cosmic rockets ?

PERIODICAL: Pokroky matematiky, fysiky a astronomie, no. 5, 1960, 573 - 582

TEXT: This article investigates the influence of movement on time in a moving vehicle in accordance with the law of relativity. First of all, it is essential to determine the observer's time (as time depends on the system, in which it is measured). The observer's time (own time) is τ. In one hour $\tau_a - \tau_b$, passes, so that

$$\tau'_a - \tau'_b = \frac{1}{c} \int_{\tau_b}^{\tau_a} ds , \qquad (1)$$

where c = the speed of light. As the observer's time is invariable, the interval is also invariable and independent of the system in

Z/028/60/000/005/003/003
D255/D304

Will time expand and contract ...

which it is measured. If time is determined in an inertial system (not moving)

$$\tau_a - \tau_b = t_a - t_b \qquad (2)$$

(time equal to ordinary time). For determining the time difference, it is further important that the rays meet at least twice. To show the difference, three inertial systems are required; these are connected to physical clocks (see Fig. 1). A = clock at rest in the first system, A' is moving in relation to A with a speed of $v = v_0$, and A'' $v = -v_0$, when the clocks meet the time is checked. When A. meets A'' the time will be

$$\tau_{A''} = \int_0^{T/2} \sqrt{1 - \frac{v_0^2}{c^2}}\, dt + \int_{T/2}^{T} \sqrt{1 - \frac{v_0^2}{c^2}}\, dt, \quad \tau_{A''} = \sqrt{1 - \frac{v_0^2}{c^2}}\, T, \qquad (3)$$

and the difference between τ_A and $\tau_{A''}$ is

Card 2/6

Will time expand and contract ...

$$\Delta\tau = \tau_A - \tau_{A'} = \left(1 - \sqrt{1 - \frac{v_0^2}{c^2}}\right) T > 0. \qquad (4)$$

This value for the difference is always positive, and independent of the position of the observer. For speeds $v_0 \sim c$ -

$$\Delta\tau \approx \frac{1}{2}\frac{v_0^2}{c^2} T; \quad (5), \text{ and for } v_0 \sim c - \Delta\tau \sim T. \qquad (6)$$

From this it is clear that time moves very slowly in inertial systems moving relative to the stationary system at a speed near that of light. However, from the practical viewpoint this formula (6) cannot be used as a rocket will have to be accelerated, and then decelerated. In a simplified single dimensional case, a rocket is started and accelerated evenly until it reaches the speed v_0; it then maintains this speed for a definite time, then is decelerated until it reaches the maximum distance from its start. Then the

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same order of movements is applied for the return journey. The clock placed in this rocket will show time

$$\tau_r = \int_0^T \sqrt{\left(1 + \frac{2U}{c^2}\right) - \left(1 - \frac{2U}{c^2}\right)\frac{v^2}{c^2}}\, dt, \tag{7}$$

while the stationary clock shows T $\tau_k \int_0^T dt = T$. The duration of flight and the maximum distance can be expressed, and for the difference

$$\Delta\tau = \left(1 - \frac{1}{\sqrt{1+\gamma_0^2}}\right) T - \frac{Uc}{a}\left(J - \frac{\gamma_0}{\sqrt{1+\gamma_0^2}}\right), \tag{19}$$

where

$$J = \int_0^{\gamma_0} \sqrt{\frac{1 + 2(1+2\gamma^2)(\sqrt{1+\gamma_0^2} - \sqrt{1+\gamma^2})}{1+\gamma^2}}\, d\gamma. \tag{20}$$

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can be found. This can be solved for low speeds, for high speeds, and in general. The results of the numerical integration of (20) for the general case are shown in Table 1, where γ_0 is shown in relation to v_0. Acceleration is the important factor; if too low it takes a very long time to reach v_0, on the other hand biological factors constitute limits. Table 2 is given for 20 years (at rest): Column 4 is in light years, and column 5 in years. As can be seen time is slowed down in the rocket, quite considerably. As can be seen, flight at a steady speed will have to be long in order to make a real gain. As the earth is not an inertial system, and cannot be excluded, these results are merely indicative. It is clear, however, states the author, that the plan to travel a long distance into space, and return, all in one lifetime is not really practical. There are 2 figures, 3 tables and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: C.B. Leffert, T.M. Donahue, Amer. Journ. of Phys. 26, 515, 1958; H. Dingle, Nature, 177, 782, 1957.

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2. Katedra teoreticke fyziky, Fakulta technicke a jaderne fyziky, Praha 1, Myslikova 7 (for Ulehla).

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AUTHOR: Lelek, V.; Ulehla, I.

TITLE: Single-nucleon model of nucleus II

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 13, no. 5, 1963, 311-317

TOPIC TAGS: single nucleon model, relativistic equation, nucleon motion, atomic nucleus, nucleon, pi meson field

ABSTRACT: In a continuation of a previous study, in which the existence of a coupled state of a nucleon in a meson field was investigated, the author formulates a single-nucleon model of the atomic nucleus by means of a potential well, which is assumed to be an averaged π-meson field formed by nucleons in the nucleus. The resulting interaction taking place in the averaged field on the nucleon is considered as a mixture of pseudo-vector, pseudo-scalar, and scalar coupling. The relativistic equations of motion of the model were numerically solved for C^{13}, O^{17}, and Ca^{41} nuclei. The results were in good agreement with values obtained by the nonrelativistic shell model, which uses spin-orbit coupling. The agreement with experimental

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data was about the same as in the case of the nonrelativistic model, or somewhat better. It is shown that a mixture of all three couplings is required for the proposed model. "In conclusion the authors thank M. Plchova for carefully performing the numerical calculations." Orig. art. has: 12 formulas.

ASSOCIATION: Fakulta tech. a jader. fyziky, Ceske vysoke ucenl technicke, Prague (Department of Technical and Nuclear Physics, Czech Technical University)

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1. Institute of Nuclear Research, Czechoslovak Academy of Sciences, Rez (for Lelek). 2. Faculty of Technical and Nuclear Physics, Praha 1, Brehova 7 (for Ulehla).