KUKLA, S.

The problem of clearing of the improved peat lands. p. 137.

GOSPODARKA WODNA. Warszawa, Poland. Vol. 18, no. 3, 1958.

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

KUKLA, V.K., inzh.

Oils and fats industry of the Moldavian S. S. R. Masl.-zhir. prom. 27 no.11:8-9 N '61. (MIRA 15:1)
(Moldavia--Oil industries)

EXCERPTA MEDICA Sec 8 Vol 12/8 Neurology Aug 59

3627. DISORDERS OF THE SKIN TEMPERATURE OF PARALYSED LIMBS IN PATIENTS WITH TUMOURS AND TRAUMAS OF THE SPINAL MEDULLA - Zaburzenia cieploty skórnej kończyn porażonych u chorych z guzami i urazami rdzenia kręgowego - Kukla W. and Rostek J. Klin. Neurochir., A.M. Poznań - NEUROL. NEUROCHIR. PSYCHIAT. 1956, 7/suppl. 4 (618-620).

The results of skin temperature measurements are represented as coefficients expressing temperature differences between the trunk and the finger. The clinical material comprised 21 patients with tumours of the spinal cord, and 25 casualties with fractures of the vertebral column. One consequence of an acute trauma of the spinal cord is paralysis of the vasomotor activity in the distal parts of the limbs. This paralysis leads to an increase in the skin temperature of the limbs relative to that of the trunk. Contrariwise, patients with prolonged spinal cord disturbances, even in the stage of complete paralysis, presented no observable difference between trunk and limb temperatures. Paralysis of vasomotor activity is proportionally slighter, the shorter the duration of the paralysis. Decrease in the temperature of the distal limbs is observed simultaneously with the symptoms of returning activity in the spinal cord or often even earlier. In casualties exhibiting a complete clinical breakdown of spinal activity, the vasomotor paralysis has no tendency to improve.

KUKLA, Wieslaw

Trauma in the Poznan and Zielona Gora region in 1962 and 1963.
Zdrow. publiczne 7/8:265-271 Jl-Ag '65.

1. Z Kliniki Neurochirurgicznej AM w Poznaniu (Kierownik: doc. dr. med. H. Powiertowski).

... of those obtained by ... The increase of temp. from 32 to 38° ... Optimum alc. yields were obtained ... fermentation. R. Ehrlich

KUKLANOV, I.N., inzh.; KHLISTUN, V.I.; SHCHERBAKOV, M.I.

Analysis of the designs of blastproof inertial mine locomotives with hydraulic drives. Vop. rud. transp. no.6:251-269 '62. (MIRA 15:8)

1. Toretskiy mashinostroitel'nyy zavod.
(Mine railroads)

76-32-2-19/38

AUTHORS: Panchenkov, G. M., Gorshkov, V. I., Kuklanova, M. V.

TITLE: The Effect of the Addition of Organic Solvents on the Ion Exchange Equilibrium (Vliyaniye dobavok organicheskikh rastvoriteley na ravnovesiye ionnogo obmena) I. The Effect of Alcohols on the Equilibrium of Alkaline Ion Exchange on Sulfo-Resins (I. Vliyaniye spirtov na ravnovesiye obmena ionov shchelochnykh metallov na sul'fosmolakh)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 2, pp. 361-367 (USSR)

ABSTRACT: The authors mainly investigated the effect of methylalcohol on the equilibrium constant of alkaline ion exchange in the sulfo resins of inland origin СДВ-3, СБС and espatite-1. The kind of dependence of the equilibrium constant on the composition of the mixed solvent and its dielectric constant was checked. The effect of alcohol on various sulfo resins in the exchange process was compared for the purpose of explaining the part played by the carbon skeleton in resin. Finally the effect of alcohol on the exchange of various

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76-32-2-19/38

The Effect of the Addition of Organic Solvents on the Ion Exchange Equilibrium. I. The Effect of Alcohols on the Equilibrium of Alkaline Ion Exchange on Sulfo-Resins

cations was compared and the part played by the salt-anion in the salts of one and the same metal was explained. - The ion exchange of the alkaline metals Li^+, Na^+, and K^+ with the H^+ ion was mainly investigated with chlorides. It is shown that the logarithm of the exchange constant in all investigated ions linearly depends on the quantity 1/D (up to the values of about≈0,02) of the solvent. (D denotes the dielectric constant of the solvent). This shows that on these conditions the basic rôle is played by the change of the electrostatic interaction of ions and not by the change of solvation. It is further shown that an addition of alcohol increases the exchange constants of all three cations, that of LiCl changing least and that of KCl most. Within the range of the used concentrations of water-alcohol solutions (up to 60 % CH_3OH) a linear dependence of the logarithm of the exchange constant on 1/D was obtained. It is shown that with an increase of the concentration these exchange constants in alcohol become greater which can be used for improving the chromatographic separation of alkaline elements. It is shown that the exchange constants with the NaJ solution

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76-32-2-19/38

The Effect of the Addition of Organic Solvents on the Ion Exchange Equilibrium. I. The Effect of Alcohols on the Equilibrium of Alkaline Ion Exchange on Sulfo-Resins

almost coincide with the corresponding exchange constants with the NaCl solution. This means that in the case of similar salts the nature of the anion has little effect on the magnitude of the exchange constant in water as well as on the change of the constant with alcohol addition. On the other hand, however, if a weakly dissociated ion was formed in consequence of the reaction, this influence is a great one. There are 5 figures, 7 tables, and 10 references, 8 of which are Soviet.

ASSOCIATION: Gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 3, 1956

Card 3/3

1. Ion exchange resins--Properties 2. Methanol--Exchange reactions 3. Organic solvents--Dielectric properties

AUTHORS: Panchenkov, G. M., Gorshikov, V. I., Kuklanova, M. V. 76-32-3-18/43

TITLE: The Influence of Organic Solvents Upon the Ionic Exchange Equilibrium (Vliyaniye organicheskikh rastvoriteley na ravnovesiye ionnogo obmena). II. The Influence of Acetone Upon the Ionic Exchange Equilibrium of Alkali Metals on Sulfo Resins (II. Vliyaniye atsetona na ravnovesiye ionnogo obmena shchelochnykh metallov na sul'fosmolakh)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 3, pp. 616-619 (USSR)

ABSTRACT: Kressman and Kitchener (ref 1) obtained equilibrium constants of the ionic exchange of K^+ in water-acetone mixtures, but did not explain the obtained results. Bafna (ref 2) does not give any confirmation of his assumptions either, whereas the investigations by Materova, Vert and Grinberg (ref 3) did not yield positive results, perhaps because of inexact knowledge of the activity coefficients in water-acetone solutions. Thus, there exists almost no satisfactory explanation on

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The Influence of Organic Solvents Upon the Ionic Exchange Equilibrium. 76-32-3-18/43
II. The Influence of Acetone Upon the Ionic Exchange Equilibrium of Alkali Metals on Sulfo Resins

the influence of acetone upon the ionic exchange equilibrium. The present paper investigates the ionic exchange equilibrium of the alkali metals Li^+, Na^+ and K^+ on the domestic sulfo resins SBS, espatite-1 and the resin SM-12 (the latter contains sulfo and carboxyl groups), where the H-form of the resins was used and work was done in water-acetone solutions. The method of the taking of isothermal lines was described in an earlier paper. From the experimental results follows that acetone exerts a stronger influence on the equilibrium constant than methanol. The change of the constant with increasing acetone concentration is similar for all resins. The presence of the weakly dissociated -COOH groups in the resin SM-12 apparently does not play any part. The increase in the ionic exchange by the influence of acetone according to its strength acts like in water i.e. most on K^+ and least on Li^+. In the investigations of the Li-form of the resin with Na^+ ions it was determined that the values for lgK yield a linear

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The Influence of Organic Solvents Upon the Ionic Exchange Equilibrium. II. The Influence of Acetone Upon the Ionic Exchange Equilibrium of Alkali Metals on Sulfo Resins 76-32-3-18/43

function of 1/D which indicates that no interaction of the ions with the molecules of the solvent takes place, but that the electrostatic ionic interaction is decisive. When a $Me^+ - H^+$ exchange is performed, the linear function is not attained, which is explained by the fact that in this case an influence of the H^+ ions upon the molecules of the solvent probably takes place.
There are 3 figures, 3 tables, and 4 references, 2 of which are Soviet

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 13, 1956

LUT, F.A.; KUKLENKO, A.P.

Clover and its mixtures in field crop rotations. Zemledelie 6 no.11:66-67 N '58. (MIRA 11:11)
(Clover) (Rotation of crops)

KUKLENKOV, I.P.

112-2-3423

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 2, p. 130 (USSR)

AUTHOR: Kuklenkov, I. P.

TITLE: Wye-Delta Switchover Starting Circuit for Electric Motors (Suggested by I. P. Kuklenkov and I. B. Osinskiy) (Skhema puska elektrodvigateley pereklyucheniyem so "zvezdy" na "treugol'nik") (Predlozheniye I. P. Kuklenkova, I. B. Osinskogo)

PERIODICAL: Sb. rats. predlozh. M-vo Elektrotekhnich. prom-sti SSSR, 1955, Nr 49, pp. 22-23

ABSTRACT: The operation of a system for switching stator windings from wye to delta utilizing a minimum number of contactors is proposed and described in detail. The system is intended to reduce the starting current of induction squirrel-cage motors. The "linear" and "delta" contactors have two contact groups, and the "wye" contactor has one. The contactors are actuated by three push buttons. The "delta" and "wye push buttons have two contacts each and the "stop" push button has one. Pushing the "wye" button starts the motor and when it has begun to turn, the "delta" contactor button is pressed and the motor windings

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112-2-3423

Wye-Delta Switchover Starting Circuit for Electric Motors (cont.)

are switched over to "delta". A great number of installations which have been set up according to this plan are simple and reliable in operation.

A. I. F.

Card 2/2

KUKLES, I. S.

O tsentrakh i fokusakh. DAN, 19 (1938), 459-461.

O neobkhodimykh i dostatochnykh usloviyakh sushchestvovaniya tsentra. DAN, 42 (1944), 164-167.

O nekotorykh sluchayakh otlichiya fokusa ot tsentra. DAN, 42 (1944), 212-215.

SO: Mathematics in the USSR, 1917-1947
Edited by Kurosh, A. G.
Markusevich, A. I.
Rashevskiy, P. K.
Moscow-Leningrad, 1948

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8"

W.E. KUKLES I. S.

Miscellaneous

1842. On Two Fundamental Groups of Singular Points [for the Differential Equation determining the Conditions of Existence of Periodic & Aperiodic Vibrations].—Kouklees. (Comptes Rendus (Doklady) de l'Ac. des Sci. de l'URSS, 29th Feb. 1944, Vol. 42, No. 6, pp. 253-255: in French.)

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KUKLES, I.S., prof., doktor fiz.-mat. nauk.

Some problems in the methodology of mechanics. Trudy UzGU no.58:
3-53 '55. (MIRA 10:12)

(Mechanics)

KUKLES, I.S.

KUKLES, I.S., prof.

Pfaff's equations with linear coefficients. Trudy UzGU no.59:97-104 '55. (MIRA 10:12)

(Differential equations)

20-3-3/52

AUTHOR: KUKLES, I.S.

TITLE: On the Frommer Method for the Investigation of a Singular Point (O metode Frommera issledovaniya osoboy tochki)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 117, Nr. 3, pp. 367-370 (USSR)

ABSTRACT: Given the differential equation

$$\frac{dy}{dx} = \frac{Y_n(x,y) + Y(x,y)}{X_n(x,y) + X(x,y)},$$

where X_n and Y_n are homogeneous polynomials of n-th degree, while X and Y are analytic functions with terms of higher order. For the investigation of the question how many characteristics go through the coordinate origin with a given tangent, if the equation $xY_n - yX_n = 0$ has real roots, the author uses the method of Frommer [Ref. 1] with the introduction of the order of curvature and the measure of curvature. The author gives seven theorems with sketched proofs and a great number of further single results.

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There is one figure and 2 Soviet and 2 foreign references.

On the Frommer Method for the Investigation of a Singular Point 20-3-3/52

ASSOCIATION: Uzbek State University im. Alishera Navoi (Uzbekskiy) gosudarstvennyy universitet im. Alishera Navoi)
PRESENTED: By A.N.Kolmogorov, Academician, 10 April 1957
SUBMITTED: 3 January 1957
AVAILABLE: Library of Congress

KUKLES, I.S.

Characteristics which intersect the origin with zero and infinite orders or measures of curvature. Izv. AN Uz. SSR. Ser. fiz.-mat. nauk no.1:15-27 '58. (MIRA 11:6)
(Geometry, Algebraic)
(Differential equations)

ZUKLES, I.S.; GHUZ, D.M.

Number of operations connected with the use of Frommer method.
Izv. AN Uz. SSR. Ser. fiz.-mat. nauk no.1:29-45 '58. (MIRA 11:6)
(Geometry, Algebraic)
(Differential equations)

AUTHOR: Kukles, I.S. SOV/140-58-3-15/34

TITLE: On the Behavior of the Characteristics of the Equation of Hukukhara in the Neighborhood of the Origin (O povedenii kharakteristik uravneniya Gukukhary v okrestnosti nachala)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958, Nr 3, pp 111 - 122 (USSR)

ABSTRACT: Hukukhara [Ref 1] showed that in many cases the behavior of the characteristics of

$$\frac{dy}{dx} = \frac{Y(x,y)}{X(x,y)}$$ results from the behavior

of the characteristics of

(1) $$x\frac{dy}{dx} = Ay^k + B(x) .$$

Let now be $B_1(x) = B(x)\left[A(k-1)\right]^{\frac{1}{k-1}}$

$$\ln^{(n)} x = \underbrace{|\ln \ln \ldots \ln x|}_{n \text{ times}}$$

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On the Behavior of the Characteristics of the Equation of Hukukhara in the Neighborhood of the Origin SOV/140-58-3-15-34

$$\varphi_n(x) = \frac{1}{2} B_1(x) k^{\frac{1}{k-1}} (-\ln x)^{\frac{k}{k-1}} \left[\ln^{(2)} x \ln^{(3)} x \ldots \ln^{(n)} x\right]^2 -$$

$$- \frac{1}{4} \left\{ \frac{2}{k} \left[\ln^{(2)} x \ln^{(3)} x \ldots \ln^{(n)} x\right]^2 + \left[\ln^{(3)} x \ln^{(4)} x \ldots \ln^{(n)} x\right]^2 + \right.$$

$$\left. + \left[\ln^{(4)} x \ldots \ln^{(n)} x\right]^2 + \ldots + \left[\ln^{(n-1)} x \ln^{(n)} x\right]^2 + \left[\ln^{(n)} x\right]^2 + 1 \right\}$$

Theorem: If for sufficiently small $x > 0$ one of the functions $\varphi_n(x)$ is $\leqq 0$, then (1) possesses characteristics which run into the origin in the first quadrant. If there exists a $\varphi_n(x)$ which for arbitrarily small positive x is larger than an arbitrary positive number h, then such characteristics do not exist in the first quadrant.
There are 3 references, 1 of which is Soviet, 1 Japanese, and 1 Italian.

ASSOCIATION: Uzbekskiy gosudarstvennyy universitet imeni A.Navoi (Uzbek State University imeni A. Navoi)

On the Behavior of the Characteristics of the Equation of Hukukhara in the Neighborhood of the Origin SOV/140-58-3-15/34

SUBMITTED: January 20, 1958

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KUKLES, I.S.

Differentiation problems for Frommer's normal domains. Izv. AN Uz.SSR.Ser.fiz.-mat.nauk no.5:69-78 '58. (MIRA 11:12)

1. Institut matematiki i mekhaniki im. V.I.Romanovskogo AN UzSSR.
(Differential equations)

KUKLES, I.S.

Behavior of the characteristics of Gukuhara's equations in the vicinity of the beginning. Dokl. AN Uz.SSR no.7:5-10 '58.
(MIRA 11:10)

1. Institut matematiki i mekhaniki imeni V.I. Romanovskogo AN UzSSR. Predstavleno akademikom AN UzSSR T.A. Sarymsakovym.
(Differential equations)

KUKLES, I.S., GRUZ, D.M.

One analogy of the Hukuhara equation. Trudy UzGU no.78:43-52 '58. (MIRA 13:6)
(Differential equations)

16(1)

AUTHOR: Kukles, I.S.

SOV/166-59-1-11/11

TITLE: On the Distinguishing Problems of Frommer (K problemam razlicheniya Frommera)

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1959, Nr 1, pp 91-104 (USSR)

ABSTRACT: Given the equation

$$(1) \qquad \frac{dy}{dx} = \frac{Y_n(x,y) + Y(x,y)}{X_n(x,y) + X(x,y)} ,$$

where X_n, Y_n are homogeneous polynomials of n-th degree, while X, Y in the neighborhood of the origin are continuous, satisfy the Lipschitz conditions and $\lim\limits_{r \to 0} \frac{X}{r^n} = \lim \frac{Y}{r^n} = 0$, $r = \sqrt{x^2+y^2}$.

In polar coordinates (1) changes into $r \frac{d\varphi}{dr} = \frac{F(\varphi)+f(r,\varphi)}{G(\varphi)+g(r,\varphi_1)}$.

Theorem: If $\lim\limits_{r \to 0} f(r,\varphi) \left[-\ln r\right]^{\frac{k}{k-1}} = 0$ for $\varphi = u\left[-\ln r\right]^{-\frac{1}{k-1}}$ and every fixed u, then the characteristic of (1) is unique in

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the first and second problem of Frommer.
Two further similar theorems for other special cases and seven examples are given. The author mentions N.B.Khaimov, V.E. Vinograd, and D.M.Grobman.
There are 8 figures and 9 references, 6 of which are Soviet, 1 Swedish, 1 American, and 1 Italian.

ASSOCIATION: Institut matematiki i mekhaniki AN Uz SSR (Institute of Mathematics and Mechanics, AS Uz SSR)

SUBMITTED: April 30, 1958

16(1) SOV/140-59-2-10/30

AUTHOR: Kukles, I. S.

TITLE: On the First and Second Distinction Problem of Frommer (O pervoy i vtoroy problemakh razlicheniya Frommera)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Matematika, 1959, Nr 2, pp 101-117 (USSR)

ABSTRACT: Given the equation

$$(1) \qquad x\frac{dy}{dx} = \frac{1}{k-1}\, y^k P(y) + f(x,y),$$

where k is even, $P(0) = 1$, $P(y)$ is analytic or satisfies the Lipschitz condition, $f(x,y)$ satisfies the Lipschitz condition in y and tends to zero with x.

Theorem: If there exists a $u_0 > 0$ so that for all $|u| > u_0$ it holds

$$u^{-k} r(x,u) = \frac{1}{k-1}(1-u^{1-k}) + \omega(x,u)u^{1-k} > h\ , \quad h > 0$$

and besides for all $u(-\infty < u < \infty)$ $r(x,y) > h$, then there exists no characteristic of (1) ending in the origin. But if $r(x,u) \leq 0$ in an arbitrarily small interval $(-\varepsilon, +\varepsilon)$ or $r(x,u) \geq 0$ in $(-\varepsilon, \varepsilon)$, while for at least one value outside of the interval $r(x,u) < 0$, then there exist infinitely many characteristics ending in the

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origin. Here $\omega(x,u) = f(x,y)(-\ln x)^{\frac{k}{k-1}}$.

Given

(2) $x\frac{dy}{dx} = -\frac{1}{k-1}y^k P(y) + f(x,y)$

and let $\lim_{x\to 0} f(x,0)(-\ln x)^{\frac{k}{k-1}} = 0$, k odd.

Theorem: If for all $|u| > u_o$:

$u^{1-k}q(x,u) = \frac{1}{k-1}(1+u^{1-k}) - \alpha(x,u)u^{1-k} > h > 0$,

where $\alpha(x,u) = \frac{\omega(x,u) - \omega(x,0)}{u}$ and besides $q(x,u) > h_1 > 0$ for all u, then only one characteristic ends in the origin. But if $q(x,u) < 0$ for $(-\varepsilon,\varepsilon)$, then there exist infinitely many characteristics ending in the origin.

Theorem 3 and 4 consider the case where $f(x,0)\cdot(-\ln x)^{\frac{k}{k-1}}$ has a

finite limit value $\neq 0$ and a special case.
The author mentions N.B.Knaimov, V.E.Vinograd, D.M.Grobman, and A.F.Andreyev.
There are 6 figures and 13 references, 8 of which are Soviet, 2 German, 1 Japanese, 1 American, and 1 Italian.

ASSOCIATION: Uzbekskiy gosudarstvennyy universitet imeni Alishera Navoi (Uzbek State University imeni Alisher Navoi)

SUBMITTED: October 14, 1958

67130
SOV/166-59-6-3/11

~~16(1)~~ 16,3400

AUTHOR: Kukles, I.S.

TITLE: On a Special Case of the First Classification Problem

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1959, Nr 6, pp 14 - 26 (USSR)

ABSTRACT: Let the equation

$$(1) \qquad x \frac{dy_1}{dx} = Ay_1^k + y_1 \varphi(x) + B(x)$$

be considered, where $\varphi(x)$, $B(x)$ is continuous, $\varphi(0)=B(0)=0$. By the transformation $y_1 = y\left[A(k-1)\right]^{-1/k-1}$ one obtains

$$(2) \qquad x \frac{dy}{dx} = -\frac{1}{k-1} y^k + y\varphi(x) + \lambda^k(x) \quad \text{with} \quad \lambda^k(x) =$$

$$= B(x)\left[A(k-1)\right]^{1/k-1}.$$ Let denote

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On a Special Case of the First Classification Problem

$$(3)\quad \varphi_n(x) = -\varphi(x)\ln x \ln^{(2)}x \ldots \ln^{(n)}x - \frac{1}{k-1}\Big[1 + \ln^{(n)}x + \ln^{(n)}x \ln^{(n-1)}x + \ldots + \ln^{(n)}x \ln^{(n-1)}x \ldots \ln^{(2)}x\Big]$$

$$(4)\quad \lambda_n(x) = \lambda(x)\Big[-\ln x \ln^{(2)}x \ldots \ln^{(n)}x\Big]^{1/k-1}$$

where $\ln^{(2)}x = \ln|\ln x|, \ldots, \ln^{(n)}x = \ln|\ln^{(n-1)}x|$.

The author investigates the behavior of the integral curves of (1) in the right half plane. If there exists only one characteristic running into the origin, then it is spoken of situation a, if there are infinitely many, then it is spoken of situation b.

Theorem 1 : If there exists a number n (n = 1,2,...) for which it is

$$(5)\quad \lim_{x \to +0} \lambda_n(x) \equiv 0 ,$$

Card 2/ 4

while $\varphi_n(x) < -h < 0$ is for small positive x, then the situation a takes place. If, however, (5) is satisfied and $\varphi_n(x) > h > 0$, then one has situation b.

Theorem 2: If there exist positive numbers x_0 and h so that

$$(7) \qquad \psi(x) = \frac{(k-1)\varphi(x) \ln x+1}{k \lambda^{k-1}(x) \ln x} < 1 - h$$

holds in $0 < x \leqslant x_0$, then one has situation a, if, however, in the same interval it is

$$(7') \qquad \psi(x) > 1 + h ,$$

then the characteristics have situation b. It is assumed that, when the denominator of (7) tends to zero, then the numerator does not tend to zero.

Then it is shown that under certain assumptions the first

On a Special Case of the First Classification Problem 67130 SOV/166-59-6-3/11

classification problem can change over into the second one. Numerous examples are considered.
There are 4 figures, and 5 references, 4 of which are Soviet, and 1 American.

ASSOCIATION: Institut matematiki imeni V.I.Romanovskogo AN Uz SSR (Mathematical Institute imeni V.I.Romanovskiy AS Uz SSR)

SUBMITTED: January 22, 1959

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8"

16(1)

AUTHOR: Kukles, I.S.

SOV/20-128-2-5/59

TITLE: Three Discrimination Problems

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 239-242 (USSR)

ABSTRACT: The author considers the equation

$$(3) \qquad r\frac{d\varphi}{dr} = \frac{F(\varphi)+f(r,\varphi)}{G(\varphi)+g(r,\varphi)},$$

where F and G are homogeneous polynomials of n-th degree in $\cos\varphi$, $\sin\varphi$, while f and g are continuous functions satisfying the Lipschitz condition in φ, where $f(0,\varphi) = g(0,\varphi) = 0$. Let $F(\varphi_0) = 0$, $G(\varphi_0) \neq 0$ and $F(\varphi)/G(\varphi) = A(\varphi-\varphi_0)^k+a_1(\varphi-\varphi_0)^{k+1}+\ldots$ There exist three discrimination problems: 1) $A<0$, k odd: in the direction φ_0 in the origin there ends one characteristic (situation a) or infinitely many (situation b); 2) $A \neq 0$, k even: in the direction φ_0 in the origin there end infinitely many characteristics (situation a) or none (situation b); 3) $F\equiv 0$, the origin is a singular knot (situation a) or an arbitrary other singular point (situation b).

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The author considers separately all three problems and obtains generalizations of the well-known results for all three cases. E.g. in case 2 it is put $\varphi - \varphi_0 = y$, $r = x$, then from (3) one obtains the equation

(4) $$x \frac{dy}{dx} = Ay^k P(y) + f_1(x,y)$$

and furthermore by the substitution

(7) $$y = y_1 \left[A(k-1)\right]^{1/k-1}$$

one obtains the equation

(8) $$x \frac{dy_1}{dx} = y_1^k P_1(y_1)/k-1 + f_2(x,y_1),$$

where $P_1(0) = 1$.

Theorem 1: Let $r(x,u) = \frac{u^k-u}{k-1} + f_2\left[x,u(-\ln x)^{1/1-k}\right](-\ln x)^{k/k-1}$.
If there exist positive numbers u_0, h, so that for all $|u| > u_0$ it holds $u^{-k}r(x,u) > h$ while for all other u it holds $r(x,u) > h$,

then the characteristics of (8) have the situation b. But if there exist the values u_1, u_2, so that $r(x,u_1) > h$ and $r(x,u_2) < -h$, while $r(x,0) \leq 0$, then the characteristics have the situation a.

Further three theorems relate to the first problem and one theorem relates to the third problem.

The author mentions Frommer, N.B. Khaimov, V.E.Vinograd, D.M. Grobman, and A.F.Andreyev.

There are 14 references, 10 of which are Soviet, 1 German, 1 Japanese, 1 Argentinian, and 1 American.

ASSOCIATION: Institut matematiki i mekhaniki imeni V.I.Romanovskogo Akademii nauk Uz SSR (Institute of Mathematics and Mechanics imeni V.I. Romanovskiy, AS Uz SSR)

PRESENTED: April 27, 1959, by I.G.Petrovskiy, Academician

SUBMITTED: April 23, 1959

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8"

KUKLES, I. S.

PHASE I BOOK EXPLOITATION SOV/4796

Akademiya nauk Uzbekskoy SSR, Tashkent. Institut matematiki i mekhaniki

Issledovaniya po matematicheskomu analizu i mekhanike v Uzbekistane (Research in Mathematical Analysis and Mechanics in Uzbekistan) Tashkent, Izd-vo AN Uzbekskoy SSR, 1960. 259 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk Uzbekskoy SSR. Institut matematiki i mekhaniki imeni V.I. Romanovskogo.

Resp. Ed.: I.S. Arzhanykh, Corresponding Member, Academy of Sciences UzSSR; Ed.: I.G. Gaysinskaya; Tech. Ed.: Z.P. Gor'kovaya.

PURPOSE: This collection of articles is intended for mathematicians, mechanics, aspirants, and students taking advanced courses in divisions of physics and mathematics at universities and pedagogical schools of higher education.

COVERAGE: The collection contains 17 articles dealing with the results of investigations on the theory of integrating differential equations in mathematical physics and mechanics, the theory of numbers, and the problem of the best approximation of functions. Individual articles discuss elasticity, flow close to a rotating disk, transverse vibrations of beams, motion of an automobile after impact, thermal stress, etc. No personalities are mentioned. References accompany 14 articles.

KUKLES, I.S.; SUYARSHAYEV, A.M.

Generalized method of Frommer. Izv. vys. ucheb. zav.; mat. no. 3:173-187 '60. (MIRA 13:12)

1. Uzbekskiy gosudarstvennyy universitet imeni Alishera Navoi i Institut matematiki imeni Romanovskogo AN UzSSR.
(Differential equations)

S/166/60/000/004/001/008
C111/C222

AUTHORS: Kuklea, I.S., Corresponding Member of the Academy of Sciences Uz.SSR, and Suyarshayev, A.M.

TITLE: Generalization of the Method of Frommer for Equations With Semianalytic Right Sides

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR. Seriya fiziko-matematicheskikh nauk, 1960, No.4, pp.11-24.

TEXT: The paper joins the earlier investigations of Kukles (Ref.2,3,4) on the problem of Frommer. The authors consider an equation in normal form (compare (Ref.4))

$$(5)\quad \psi(x)\frac{dy}{dx} = a_0 y^n + \varphi_1(x)y^{n_1} + \varphi_2(x)y^{n_2} + \dots + \varphi_2(x)y + \varphi_s(x) + R(x,u),$$

where

$$(4)\quad n > n_1 > n_2 > \dots > n_s = 0,$$

$$(4')\quad \lim_{x\to +0}\frac{\varphi_i(x)}{\varphi_{i-1}(x)} = 0, \qquad i=1,2,\dots,s$$

and the remainder $R(x,y)$ consists of terms $\alpha_k(x)y^{n-k}$, where to every k

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S/166/60/000/004/001/008
C111/C222

Generalization of the Method of Frommer for Equations With Semianalytic Right Sides

there exists at least one i so that

$$(4'') \qquad \frac{\alpha_k(x)y^{n-k}}{\varphi_i(x)y^{n_i}} \longrightarrow 0$$

with x and y $\rightarrow 0$. The authors investigate the question whether for $x > 0$ there exist trajectories which end in (0,0) and if there exist such trajectories, whether their set is finite or infinite. By introducing of so-called characteristic functions which are small of different order, the problem of Frommer is generalized to the considered case. Three lemmas on the orders of the introduced characteristic functions are proved. No final result with respect to the initial problem is given. There are 4 Soviet references.
[Abstracter's note: The comprehension of the paper is very difficult by very confused and incompletely explained notations and by probable misprints or mistakes owing to inadvertence].

ASSOCIATION: Institut matematiki im. V.I.Romanovskogo AN Uz SSR (Institute of Mathematics im.V.I.Romanovskiy AS Uz SSR)

SUBMITTED: January 14, 1960

Card 2/2

16.3500

S/044/61/000/005/007/025
C111/C444

AUTHOR: Kukles, I. S.

TITLE: On some problems of nonlinear oscillations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1961, 26, abstract 5B134. (Vses. Mezhvuz. Konferentsiya po teorii i metodam rascheta nelineyn. elektr. tsepey, no. 7, Tashkent, 1960, 13 - 24)

TEXT: A survey, representing the main results of I. S. Kukles and his disciples: N. B. Khaimov, P. L. Khaimova, D. M. Gruz, A. Suyartayev, N. Abdulayev, on some questions of the theory of nonlinear oscillations; e. g. methods for establishing the behaviour of the integral curves of the system

$$\frac{dx}{dt} = X(x,y), \quad \frac{dy}{dt} = Y(x,y)$$

if the right hands are non-analytic functions of the kind

$$\alpha y^n + \alpha_1(x)y^{n-1} + \alpha_2(x)y^{n-2} + \dots + \alpha_n(x)$$

Card 1/2

One some problems of nonlinear... S/044/61/000/005/007/025
C111/C444

where α_i are continuous functions. There are also given results on the isochronous problem, obtained by the author together with S. P. Abdulayev.

(Abstracter's note: Complete translation.)

Card 2/2

KUKLES, I. S.

"On two problems of nonlinear oscillations theory."

report submitted for the Intl. Symposium on Nonlinear Vibrations, IUPAM, Kiev Sept 12-18, 1961.

Uzbek State Univ. Samarkend USSR

88559

S/020/61/136/001/004/037
C111/C222

16.3400

AUTHORS: Kukles, I.S., and Suyarshayev, A.M.

TITLE: Frommer's Generalized Method

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 1, pp. 29-32

TEXT: The authors consider

$$(1)\quad \frac{dy}{dx} = \frac{\alpha_0 y^m + \alpha_1(x)y^{m-1} + \alpha_2(x)y^{m-2} + \ldots + \alpha_m(x)}{\beta_0 y^n + \beta_1(x)y^{n-1} + \beta_2(x)\, y^{n-2} + \ldots + \beta_n(x)}$$

where α_0, β_0 are constants, $\alpha_0^2 + \beta_0^2 \neq 0$; $\alpha_i(x)$, $\beta_i(x)$ differentiable for small $x > 0$ and of a constant sign, $\alpha_i(0) = \beta_i(0) = 0$, $i = \overline{1,m}$ and $i = \overline{1,n}$, respectively. If all $\alpha_i(x) \equiv 0$, $i = \overline{1,m}$ then let at least one $\beta_j(x) \neq 0$.

Putting $y = u\omega(x)$, where $\omega(x)$ is differentiable for small $x > 0$ then one obtains

$$(2)\quad \frac{du}{dx} = \frac{P(x,u)}{Q(x,u)}$$

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where

$$(3)\ P(x,u) = u^m\omega^{m-1}(\alpha_0 - \beta_0 \frac{\omega'}{\omega}) + u^{m-1}\omega^{m-2}(\alpha_1 - \alpha_1 \frac{\omega'}{\omega}) + \ldots$$

$$\ldots + u(\alpha_{m-} - \beta_{m-1}\frac{\omega'}{\omega}) + \frac{\alpha_m}{\omega}$$

and

$$(3')\ Q(x,u) = \beta_0 u^{m-1}\omega^{m-1} + \beta_1(x)u^{m-2}\omega^{m-2} + \beta_2 u^{m-3}\omega^{m-3} + \ldots + \beta_{m-1}(x)$$

Here $m = n + 1$, that gives no loss of generality.

Let $y(x)$, $x > 0$, be continuous. If $\lim \frac{y(x)}{\omega(x)} = A$, where $0 < |A| < \infty$ then it is said that $y(x)$ has the same order of smallness than $\omega(x)$ and has the measure of smallness A.

Let

$$\omega_{ij} = \left|\frac{\alpha_j}{\alpha_i}\right|^{\frac{1}{j-1}},\quad \omega_{i'j'} = \left|\frac{\beta_j}{\beta_i}\right|^{\frac{1}{j-1}},\quad \omega_{ij'} = \omega_{j'i} =$$

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8"

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Frommer's Generalized Method S/020/61/136/001/004/037
C111/C222

$$= \left[(j - 1) \int_{x_0}^{x} \left| \frac{\alpha_i}{\beta_j} \right| dx \right]^{\frac{1}{i-j}} , \quad \omega_{ii'} = \exp \left[\int_{x_0}^{x} \left| \frac{\alpha_i}{\beta_i} \right| dx \right]$$

Let $\gamma_j = \alpha_j \omega^{m-j-1}$ (or $\gamma_{j'} = \beta_j \omega^{m-j-2} \omega'$) lie at the right side of $\gamma_i = \alpha_i \omega^{m-i-1}$ (or $\gamma_{i'} = \beta_i \omega^{m-i-2} \omega'$) if $j > i$; let $\gamma_{i'}$ lie at the right side of γ_i. Furthermore: let ω_{ik} lie at the right side of ω_{ij} if $k > j$; let $\omega_{ik'}$ lie at the right side of ω_{ik} etc.
Let γ_i (or $\gamma_{i'}$) be the utmost left element $\gamma \neq 0$. Considering the functions $\omega_{ii'}$, $\omega_{i,i+1}$, $\omega_{i,(i+1)'}$, ..., ω_{im} (or $\omega_{i',i+1}$, $\omega_{i',(i+1)'}$, $\omega_{i',i+2}$, ... $\omega_{i'm}$) then that one of them is called the first characteristic function which has the least order of smallness.
If $\overline{\omega}_{ij}$ (or $\overline{\omega}_{i'j'}$) is the first characteristic function then the functions
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$\omega_{jj'}$, $\omega_{j,j+1}$, $\omega_{j,(j+1)'}, \ldots, \omega_{jm}$ are considered. That one of them which has the least order of smallness is called the second characteristic function etc . The functions ω_{kl} , $\omega_{kl'}$, and $\omega_{k'l'}$ are called ordinary, the function $\omega_{kk'}$ is called singular.

The total number of characteristic functions is $\leq m$. The order of smallness of the i-th characteristic function is greater than that of the (i-1)-st.

Theorem 1 : Every solution $y(x)$ of (1) defined in the right halfplane and vanishing in the origin, has the order of smallness of a characteristic function.

If the characteristic function ω is ordinary then (2) has the form

$$(4) \qquad \frac{du}{dx} = \frac{N(u) + \epsilon(x,u)}{k(u)\left[N_1(u) + \epsilon_1(x,u)\right]} ,$$

where $N(u)$, $N_1(u)$ are polynomials ; $\epsilon(x,u)$, $\epsilon_1(x,u)$, $k(x)$ are continuous functions vanishing with x, and $\int_0^x \frac{dx}{k(x)} = \infty$

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Frommer's Generalized Method S/020/61/136/001/004/037
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Theorem 2 : If the order of smallness of the solution $y(x)$ of (1) is identical with the order of an ordinary characteristic function $\overline{\omega}$ then the measure of smallness of this solution equals one of the real roots of the equation $N(u) = 0$ which are different from zero.
If $\overline{\omega}$ is a singular characteristic function then (2) has the form

$$\frac{du}{dx} = \frac{N_2(u) + \varepsilon(x,u)}{\lambda(u)\left[N_1(u) + \varepsilon_1(x,u)\right]}, \tag{4'}$$

where N_2, N_1 are polynomials, $\varepsilon(x,u)$, $\varepsilon_1(x,u)$ are continuous functions vanishing with x; $\lambda(x)$ is continuous for small $x > 0$ but for $x = 0$ it may have a jump.
Theorem 3 : If $\overline{\omega}_{kk'}$ is a singular characteristic function then three cases are possible : 1) $\alpha_k(x)$ and $\beta_k(x)$ have different signs; 2) $\alpha_k(x)$ and $\beta_k(x)$ have equal signs, where

$$\int_0^x \frac{dx}{\lambda(x)} \tag{5}$$

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diverges; 3) $\alpha_k(x)$ and $\beta_k(x)$ have equal signs where (5) converges. In the case 1) (1) has no solutions with the order of smallness of $\overline{\omega}_{kk'}$ in the right halfplane. In the case 2) there exist such solutions only then if their measures of smallness are equal to the real roots of $N_2(u) = 0$ which are different from zero. In the case 3) there exist infinitely many solutions with the order of smallness of $\omega_{kk'}$, and every solution has its own measure of smallness (singular case).

There are 4 references: 3 Soviet and 1 German.

[Abstracter's note : There are several misprints in the formulas]

ASSOCIATION: Uzbekskiy gosudarstvennyy universitet imeni Alishera Navoi (Uzbekskaya State University imeni Alisher Navoi)

PRESENTED: July 8, 1960, by I.G. Petrovskiy, Academician
SUBMITTED: June 21, 1960

KUKLES, I.S. (Samarkand); NUROV, T. (Samarkand)

Distinction between a center and a focus. Izv. vys. ucheb. zav.; mat. no.6:98-108 '63 (MIRA 17:8)

L 53743-65 EWT(d) Pg-4 IJP(c)
ACCESSION NR: AP5017236 UR/0140/64/000/006/0088/0097

AUTHOR: Kuklee, I. S. (Samarkand); Khasanova, M. (Samarkand)

TITLE: Distribution of singular points of a first and second group

SOURCE: IVUZ. Matematika, no. 6, 1964, 88-97

TOPIC TAGS: differential equation, distribution theory

ABSTRACT: This paper is a study of the distribution of the singular points of the differential equation

$$\frac{dy}{dx} = \frac{q_1x + q_2y + q_3x^2 + q_4xy + q_5y^2}{p_1x + p_2y + p_3x^2 + p_4xy + p_5y^2} \qquad (1)$$

(p_i and q_i are constant coefficients) in the finite protion of the plane. This problem has been studied by various mathematicians. The early, partly erroneous results of W. BUCHEL (1904) and M. FROMMER (1934) were corrected by the Soviet mathematicians N. A. SAKHARNIKOV, N. A. LUKASHEV, A. N. BERLINSKIY, Kh. R. LATIPOV, and I. I. SHIROV, S. P. LATINOV, in particular, demonstrated the possibility of the coexistence of a center and focus for Equation (1) and studied the behavior of the curves of this equation on Poincare's sphere for

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the case in which the origin is at the center. A. N. BERLINSKIY has developed several general theorems concerning the singular points of Equation (1): his basic approach has been to introduce an affine transformation, which results in the numerator and denominator of the right-hand member of (1) being resolved into a product of linear factors. On this basis, and with the help of Poincare's theory of indices, he demonstrated that if a quadrangle constructed on the singular points is convex, then two opposite singular points will be saddle points ... other two will be "antisaddle points" (nodes ... or foci). If ... the quadrangle is concave, then either an internal point will be a ... point and there will be three external antisaddle points, or the external points will be saddle points, and the internal point, an antisaddle point. In addition he showed that the number of singular points of the second group (centers or foci) does not exceed two.
... Gasipov's proof of this theorem, intended to replace Berlinskiy's ... very complex one, is nonrigorous and also inapplicable to the general ... equation (1). This paper includes the authors' proof of the theorem ... simple and rigorous, and does not involve factoring the numerator and denominator in the right-hand member of (1). points O(0, 0), A'(x_1, y_1), ... and M'(x_3, y_3) are four singular points of equation (1).

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With the substitution

$$\bar{x} = \frac{1}{D_0}(x_1 y - x y_1), \quad \bar{y} = \frac{1}{D_0}(y_2 x - y x_2), \qquad (2)$$

equation (1) becomes

$$\frac{dy}{dx} = \frac{ax(x-1) + by(y-1) + cxy}{a_1 x(x-1) + b_1 y(y-1) + c_1 xy}.$$

for which it is shown that point 0 remains at the origin, point A' is shifted to point A(1, 0), and point B' is shifted to point B90, 1).
With a = 1, equation (2) becomes

$$\frac{dy}{dx} = \frac{x^2 - x + b(y^2 - y) + cxy}{a_1(x^2 - x) + b_1(y^2 - y) + c_1 xy}.$$

The discriminant of the secular equation is $D_0 = (b - a_1)^2 + 4b_1$. If $D_0 > 0$, the origin belongs to the first group of singular points; and if $D_0 < 0$, to the

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second (that is, it becomes a center of a focus). With $D_o = 0$, the origin will be a degenerate node, provided the characteristic determinant $\Delta_o \neq 0$. For the point A(1,0) the discriminant of the secular equation has the form $D_A = (c - a_1 - b)^2 - 4(c_1 - b_1)$, while for B it is $D_B = (c_1 - a_1 - b)^2 - 4b_1(c - 1)$. With the substitutions $c - a_1 - b = u$, $c_1 - a_1 - b = v$ and $a_1 + b = k$, the discriminant becomes $D_A = u^2 + 4(v + k - b_1)$, $D_B = v^2 + 4b_1(u + k - 1)$. Setting $D_A = D_B$, the authors obtain the parabolas

$$u^2 = -4(v + k - b_1), \quad (3)$$

$$v^2 = -4b_1(u + k - 1) \quad (4)$$

Let α_A be the region bounded by parabola (3) and the straight line $v = c$, and α_B be that bounded by parabola (4) and $u = c$. If point M(u, v) falls within α_A, then A belongs to the second group; and if it falls outside α_A,

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ACCESSION NR: AP5017236

it belongs to the first. Similarly, if M(u, v) falls within α_B, point B belongs to the second group; and if it falls outside α_B, it belongs to the first group. ... on the boundary of α_A and α_B, then A ... is a degenerate node. ... seen that A and B may both belong to the same ... group if and only if parabolas (3) and (4) intersect and point M is within both α_A and α_B (Quadrangle OABM).

It is shown that M is a singular node if and only if c = 0 and c_1 = 2 (if the origin is also a singular node). Quadrangle OABM is convex, points B and M are saddle points, and lines AB, AM, OB and OM consist of curves in this case; the diagonal MB is an isocline of infinity, and the diagonal OA consists of curves and is also an isocline of infinity. Points A and B are singular nodes if c_1 = 0 and c = 2 or if $\alpha = \beta = 1$ ($\alpha = (1-c_1)/(1-cc_1)$, $\beta = (1-c)/(1-cc_1)$ are the coordinates of point M). In all cases, it is only opposite points which can be singular nodes, and the two others are then saddle points, the quadrangle being convex and its sides consisting of curves.

... shown that if A and B are accurate foci, then M is within the first ... is always a saddle point. If, in addition, ... is greater ... the origin is a saddle point ... quadrangle ABM ... But if ... $+ b_1$) is less than zero, then the origin is a node and the quadrangle is concave. Orig. art. has 3 figures and 22 formulas.

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L 53743-65
ACCESSION NR: AP5017236

ASSOCIATION: none

SUBMITTED: 08Jun64 ENCL: 00 SUB CODE: MA

NO REF SOV: 010 OTHER: 003 JPRS

Card 6/6

KUKLES, I.S.; SHAKMOVA, P.L.

Studying the behavior of surfaces determined by the Pfaff equation near a point at infinity. Trud; Sam. Gos. un. no.144:49-62 '64. (MIRA 18:9)

KUKLES, I.

Information on the Samarkand Symposium. Dif. urav. 1 no.4:560-563 Ap '65. (MIRA 18:5)

KUKLES, I.S.; SHAKHOVA, L.V.

Limiting cycles of the differential equation

$$\frac{dy}{dx} = \frac{\sum_{i+j=0}^{2} b_{ij}\, x^i y^j}{\sum_{i+j=0}^{2} a_{ij} x^i y^j}$$

Izv. AN Uz.SSR. Ser. fiz.-mat. nauk 9 no.5:24-29 '65.
(MIRA 18:11)

1. Samarkandskoye otdeleniye Instituta matematiki imeni Romanovskogo AN UzSSR. Submitted December 22, 1964.

L 25918-66 EWT(d) IJP(c)

ACC NR: AP6016676 SOURCE CODE: UR/0166/65/000/005/0024/0029

AUTHOR: Kukles, I. S.; Shakhova, L. V.

ORG: Samarkand Branch, Institute of Mathematics im. V. I. Romanovskiy AN UzSSR (Samarkandskoye otdeleniye Instituta matematiki AN UzSSR)

TITLE: Limiting cycles of the differential equation $\frac{dy}{dx}=\frac{\sum_{i+j=0}^{2} b_{ij}x^iy^j}{\sum_{i+j=0}^{2} a_{ij}x^iy^j}$

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 5, 1965, 24-29

TOPIC TAGS: differential equation, mathematics

ABSTRACT: The authors investigate the differential equation

$$\frac{dy}{dx}=\frac{Y_2(x,y)}{X_2(x,y)},$$

where

$$Y_2(x,y)=b_{00}+b_{10}x+b_{01}y+b_{20}x^2+b_{11}xy+b_{02}y^2,$$
$$X_2(x,y)=a_{00}+a_{10}x+a_{01}y+a_{20}x^2+a_{11}xy+a_{02}y^2.$$

Equation (1) is assumed to have four simple singular points, one of which is made the coordinate origin. Consequently,

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L 25918-66

ACC NR: AP6016676

$$a_{00} = b_{00} = 0.$$

An earlier paper by one of the authors (I.S. KUKLES, M. KHASANOVA, Matematika /Mathematics/, 1964, No 6) gave a complete qualitative study of Equation (1); the present note discusses its limiting cycles. According to AN.N. BERLINSKIY (Uchenyye zapiski GGU /Scientific Notes of the Gor'kiy State University/, No 3, XX, 1958), the differential equation (1) can always be presented in the form

$$\frac{dy}{dx} = \frac{(a_1x + b_1y)(c_1x + d_1y + e_1)}{(ax + ey)(cx + dy + e)}.$$

The case under investigation is the one for which the isocline at infinity is represented by a pair of parallel straight lines. Orig. art. has: 3 figures, 34 formulas, and 2 tables. [JPRS]

SUB CODE: 12 / SUBM DATE: 22Dec64 / ORIG REF: 003

Card 2/2 BLG

L 05193-67 EWT(d) IJP(c)

ACC NR: AP7000750 SOURCE CODE: UR/0140/66/000/003/0073/0083

12
B

KUKLES, I. S., and AKCHURINA, R. Yu., (Samarkand)

16

"Discrimination Problems for Characteristics in a Three-Dimensional Space"

Moscow, Izvestiya VUZ -- Matematika, No. 3 (52), 1966, pp 73-83

ABSTRACT: The article considers the three differential equations

$$\begin{aligned} \frac{dx}{dt} &= f_k(x, y, z) + F_1(x, y, z), \\ \frac{dy}{dt} &= \varphi_k(x, y, z) + F_2(x, y, z), \qquad (1) \\ \frac{dz}{dt} &= \psi_k(x, y, z) + F_3(x, y, z), \end{aligned}$$

where $f_k(x, y, z)$, $\varphi_k(x, 7, z)$, $\psi_k(x, y, z)$ are homogeneous polynomials of degree k; $F_1(x,y,z)$, $F_2(x,y,z)$, $F_3(x,y,z)$ are functions definable by the conditions

$$\frac{F_m}{r^k}, \; \frac{\partial F_m}{\partial x}\frac{1}{r^k}, \; \frac{\partial F_m}{\partial y}\frac{1}{r^k} \quad (m = 1, 2, 3)$$

tend to 0, together with $r = \sqrt{x^2 + y^2 + z^2}$. In a similar manner as was

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ACC NR: AP7000750

done on a plane, the authors establish normal regions of the 1st, 2nd, and 3rd kind and in accordance therewith consider the first, second, and third discrimination problems, as well as a fourth discrimination problem which occurs in a space. It is known that all characteristics that have entered a normal region of the 1st kind will enter the origin in the direction of the z-axis. In a normal region of the 2nd kind there is either one or an infinite set of characteristics which enters the origin, and the question of distinguishing these two possibilities constitutes the first discrimination problem. In a normal region of the 3rd kind there is either no characteristic which asymptotically approximates the plane or an infinite set thereof, and herein lies the second discrimination problem. If for a normal regionof the 3rd kind an infinite set of characteristics enters the origin, they enter the origin either along a certain surface or by forming a spatial body, and the distinguishing of these two possibilities is the fourth discrimination problem. In the case of the so-called "singular type" of region, characteristics either do or do not enter the origin in all directions, and this the third discrimination problem.

The authors note that such problems were considered by L. E. REYZIN', R. M. MINTS, and others, who, however, assumed the asymptotic stability of solutions (an assumption which makes a solution ineffective) or assumed the analyticity of the right-hand sides of equations (1). The authors of the present article make more general assumptions for these problems. Orig. art. has: 25 formulas. [JPRS: 37,330]

TOPIC TAGS: asymptotic solution, polynomial

SUB CODE: 12 / SUBM DATE: 08Jun65 / ORIG REF: 004 /

Card 2/2 vmc

UDC: 517.917

CZECHOSLOVAKIA

KUKLETA, K.: Physiological Institute, Medical Faculty (Fysiologicky Ustav Lekarske Fakulty), Brno.

"The Question of Interhemispheral Transfer of Defense Reflex."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 2, Feb 66, pp 114-115

Abstract: The author describes experiments with rats, where one of the hemispheres was made inactive by expanding depression. Reproduction of a defense reflex with both hemispheres inactive is described. A case of a defense reflex transmitted not by a transfer of information but by traces of memory formed without the role of the neocortex is discussed. 5 Czech references. Submitted at "16 Days of Phsyiology" at Kosice, 30 Sep 65.

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APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8

CZECHOSLOVAKIA

KUKLETA, M.: Department of Physiology, Medical Faculty, J.E. Purkyne University, Brno. /Orig. version not given/.

"The Effect of Cortical Spreading Depression on Memory in Rats."

Prague, Activitas Nervosa Superior, Vol 8, No 2, Jun 66, pp 187-188

Abstract: Effect of cortical spreading depression of EEG (CSD) on various types of instrumental reflexes was studied. Application of 25% KCl solution was used to evoke the CSD. CSD obliterated completely conditioned responses in rats. Active avoidance response was partly affected by CSD. Simple avoidance responses were maintained, instrumental responses varied with the character of the task. Complicated responses were entirely obliterated. If the responses were trained with one hemisphere blocked by CSD, then the bilateral CSD did not affect the temporary connection. No references. Submitted at the 4th Interdisciplinary Conf. of Exp. and Clin. Study of Higher Nerv. Functions at Mar. Lazne, 12-15 Oct 65. Article is in English.

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L 12954-66

ACC NR: AP6005654 SOURCE CODE: CZ/0079/65/007/002/0163/0164

AUTHOR: Kunc, L.; Kukleta, M.

ORG: Institute of Industrial Hygiene and Occupational Diseases, Ostrava; Physiological Institute, Medical Faculty, Purkyne University, Brno

11 B

TITLE: Functional assymetry in the effect of unilateral spreading depression in rats [This paper was presented at the Third Interdisciplinary Conference on Experimental and Clinical Study of Higher Nervous Functions held in Marianske Lazne from 19 to 23 October 1964.]

SOURCE: Activitas nervosa superior, v. 7, no. 2, 1965, 163-164

TOPIC TAGS: rat, brain, behavior pattern

ABSTRACT: Conditioned unilateral reflex to universal depression was studied in 88 rats. Rats with unilateral depression required a longer training for conditioned avoidance reaction than did the control rats. Extinction was more rapid; both right and left hemispheres showed an identical influence. Unilateral depression resulted in a drop of exploratory activity. Exclusion of the right hemisphere was more effective. The most variable components of higher nervous activity in rats are their orienting activity and capacity for orientation; the right hemisphere is the dominant one in this respect. [JPRS]

SUB CODE: 06, 05 / SUBM DATE: none / ORIG REF: 004

Card 1/1 HW

KUKLETA, Miloslav.

Proof of the subcortical localization of memory traces in the rat brain. Scr. med. fac. med. Brunensis 38 no.1/2 19-24 '65

Apropos of functional asymmetry of the rat cerebrum. Ibid. 25-31

1. Katedra fysiologie lekarske fakulty University J.E. Purkyne v Brne (vedouci - prof. MUDr. DrSc. Vladislav Kruta.

KUKLEV, A. M. Cand Agr Sci -- (diss) "Agricultural-engineering indicators of the quality of planting material, and the basic physical properties of tubers as characteristics of the grading of potatoes for planting." Omsk, 1958. 26 pp (Authors' Abstracts of Dissertations submitted in Omsk Agr Inst im S. M. Kirov), 200 copies (KL, 52-58, 105)

Country : USSR K

Category: Forestry. Forest Management.

Abs Jour: RZhBiol., No 11, 1958, No 48743

Author : Kuklev, G.N.

Inst : –

Title : Combination Cuttings in the Hardwood-Spruce Tree Stands.

Orig Pub: Lesn. kh-vo, 1957, No 12, 23-26

Abstract: No abstract.

Card : 1/1

SOV/162-58-3-5/26

9(9)

AUTHORS: Kuklev, L.P., and Ozerskiy, Yu.P.

TITLE: The Probability of Exceeding the Limitation Level by Fluctuation Voltage Within a Given Time Interval (Veroyatnost' prevysheniya fluktuatsionnym napryazheniyem urovnya ogranicheniya v zadannom otrezke vremeni)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Radiotekhnika i elektronika, 1958, Nr 3, pp 33-37 (USSR)

ABSTRACT: The authors derive a general expression for the probability of exceeding the limitation level by fluctuation noise which depends upon the distribution of the intervals between the noise peaks within a given time interval

$$d(t,E_0) = 1 - \bar{N}(E_0)\left[\int \lambda p(\lambda) d\lambda - t \int p(\lambda) d\lambda \right] \quad (3)$$

whereby $d(t,E_0)$ is the probability of exceeding the limitation level E_0; T is the time interval; $N(E_0)$ is the average number of intervals between peaks

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SOV/162-58-3-5/26

The Probability of Exceeding the Limitation Level by Fluctuation Voltage Within a Given Time Interval

within the time T at the level E_0. This equation may be used for solving a number of different problems connected with the signal detection in noises, the influence of fluctuation noises on radio equipment, limiters, coincidence circuits, etc. With small a (relative time), or large x_0 (relative limitation level), the probability $d(a, x_0)$ is expressed in this way

$$d(a,x_0) = (1 + a\,x_0)\exp\left(-\frac{x_0^2}{2}\right) \qquad (5)$$

This approximated dependence coincides with the formula found by L.Z. Klyachkin, which he used erroneously for arbitrary a and x_0. There are 3 graphs and 1 Soviet reference.

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SOV/162-58-3-5/26

The Probability of Exceeding the Limitation Level by Fluctuation Voltage Within a Given Time Interval

ASSOCIATION: Kafedra radiotekhniki Moskovskogo fiziko-tekhnicheskogo instituta (Chair of Radio Engineering of the Moscow Institute of Physical Engineering)

SUBMITTED: February 19, 1958

Card 3/3

AUTHOR: L.P. Kuklev SOV/109- 4-3-4/38

TITLE: Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems (Vozdeystviye fluktuatsionnoy pomekhi na dekodiruyushcheye ustroystvo po intervalu mezhdu impul'sami kodovoy gruppy)

PERIODICAL: Radiotekhnika i Elektronika, 1959, Vol 4, Nr 3, pp 374-380 (USSR)

ABSTRACT: The work investigates the problem of the influence of the fluctuation noise in certain radio navigation systems. The coding adopted in these systems consists of sending a group of n identical pulses (of the same shape and duration) but of variable spacing between the pulses. The decoding of such signals is done by means of a delay line and coincidence circuits, which compare the coding spacings in the signal with the durations of the delays in the line; the latter is adjusted for the reception of a pre-determined code. For the purpose of analysis, it is assumed that the intermediate-frequency amplifier of the receiver is followed by a linear amplitude detector and an amplitude limiter; the pulse signal is detected if the voltage, during the appearance of the signal, exceeds a limit level. For estimating the effect of noise a

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Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems

probability P_{π} is introduced, which is defined as the probability of obtaining at least one noise-actuated output signal during the search pulse of the receiver. The search pulse has a duration g which is considerably longer than that of the signal pulses. If the average number of noise-actuated pulses at the output of the decoder per unit time is R, the probability P_{π} is given by:

$$P_{\pi} \simeq gR \quad . \tag{1}$$

If the duration of the coding intervals is much longer than the correlation time between the peaks of the perturbing noise, and the signal is absent, the average time during which the noise is present at the output of the decoder can be expressed as:

$$\varepsilon = \left[\int_{E_0}^{\infty} W(E)\, dE\right]^n = \exp\left(-n\frac{x_0^2}{2}\right). \tag{2}$$

where $x_0 = E_0/u_{\pi}$ is the relative limiting level; n in Eq (2) represents the number of segments at which the noise

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Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems

exceeds the limiting level. The average number of false output signals, R_n , is expressed by Eq (3) where θ_n is the mean statistical duration of the noise peaks at the output of the decoder. The final formula for R_n is in the form of Eq (6) while the noise probability is given by:

$$P_{\pi} = gR_n = \frac{g\delta\omega}{\sqrt{2\pi}} n x_o \exp\left(-n\frac{x_o^2}{2}\right) \qquad (7)$$

$\delta\omega$ in Eq (7) denotes the average noise spectral width at the output of the detector. Eq (7) was checked experimentally for n = 1,2,3,4 and 5. The results are shown in Fig (1); the solid curves are calculated on the basis of Eq (7), while the circles denote the experimental points. When both the signal and noise are present, the probability of the transfer of an n-pulse code group through the limiter, p_n , can be expressed by Eq (14); the following notation is adopted in the equation: x is the amplitude of the envelope of the signal, $x_c = E_c/u_{\pi}$ is the ratio of the amplitude of

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Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems

the signal to the noise; $H = nx_o^2/2$. Eq (14) is valid for the case when the bandwidth of the intermediate-frequency amplifier is an optimum, that is $\Delta f = 1/\tau$ where τ is the duration of a pulse. If $\Delta f \tau = k$, the probability p_n is expressed by Eq (15) where $H_o = Hk$. The resulting formulae are used to plot the graphs of p_n for various values of k; these are shown in Fig (2). From the above analysis it is found that the space-duration pulse coding of signals provides an efficient method of protecting the signals from noise. However, the loss in the signal-to-noise ratio at the output of the receiver increases with the number of pulses in a code group. It is therefore necessary to employ the codes having a small number of pulses. It is also found that if the bandwidth of the receiver is increased above the optimum value, an additional loss in the signal-to-noise ratio occurs. The author expresses his gratitude to Professor Ye.I. Manayev for reading the manuscript and

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SOV/109- - -4-3-4/38

Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems

for valuable remarks. There are 2 figures and 7 references, 6 of which are Soviet and 1 English; one of the Soviet references is translated from English.

SUBMITTED: October 12, 1957

Card 5/5

80530

16.6800

S/109/60/005/06/002/021
E140/E163

AUTHORS: Kuklev, L.P., and Ozerskiy, Yu.P.

TITLE: Comparison of Two Decoding Methods for Interval Codes

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 6, pp 894-901 (USSR)

ABSTRACT: In interval coding an elementary signal group consists of several pulses of common duration and shape, distant from each other by preassigned time intervals. A delay line with n taps is used to decode a group of n pulses. Two methods of processing the signals from the taps exist: a coincidence method and a summation method. For technical reasons the coincidence method is preferred. The purpose of the article is to compare the noise stabilities of the two methods for the cases of regular and fluctuating signals in the presence of noise. From the analysis it follows that the summation method almost always gives an appreciable loss of noise stability in comparison with the coincidence method. Only at relatively low signal/noise ratios is a certain advantage of the summation method observed. This is because for small signals the amplitude-limiting level

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80520

S/109/60/005/06/002/021
E140/E163

Comparison of Two Decoding Methods for Interval Codes

of the summation method is close to optimal.

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There are 4 figures and 3 Soviet references.

ASSOCIATION: Kafedra radiotekhniki, Moskovskogo fiziko-tekhnicheskogo instituta (Radio Engineering Faculty, Moscow Physico-Technical Institute)

SUBMITTED: November 26, 1959

KUKLEV, L.P.; OZERSKIY, Yu. P.

Reply to I.M.Petrov and G.S.Tysliatskii's letter. Radiotekh.i elektron. 6 no.7:1213-1215 Jl '61. (MIRA 14:6)
(Information theory) (Petrov, I.M.) (Tysliatskii, G.S.)

KUKLEV L.S.

AUTHOR: Kuklev, L.S., Engineer 135-9-18/24

TITLE: Rivet Head Welding in the Manufacture of Electric Instruments (Privarka zaklepochnykh golovok pri izgotovlenii elektroapparatury)

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 9, p 35 (USSR)

ABSTRACT: The novelty of the method concerned consists in the way of punching the thin-sheet parts to be joined by rivets - by a nail-like punch which produces a torn, spiky rim around the punched hole. The existing method of spot welding steel rivets and studs to stamped thin-sheet instrument parts has the following disadvantages: the joint is weak due to the small fusion area between the rivet head and the part, frequently non-fusion occurs and the rivet has a non-perpendicular position in the hole. The new method of punching eliminates the aforementioned disadvantages by providing a longer guide for the rivet and a welded joint of a higher strength than that of the stamped part of the base metal. The method is being employed at the author's plant since December 1956. The article contains 2 sketches.

AVAILABLE: Library of Congress

Card 1/1

SUKLEV, V.

Who ruined Tanya's life. Sov.profsoiuzy 18 no.22:36-37 N '62.
(MIRA 15:12)
(Krasnodar—Social problems)

KUKLEV, V.G.

7500

INVESTIGATION OF NON-METALLIC INCLUSIONS BY [illegible] RADIOGRAPHY, B. M. Gulchev and V. G. Kuklev. p.69-78 in Meetings of the Division of Technical Sciences, Session of the Academy of Sciences of the U.S.S.R. on the Peaceful Use of Atomic Energy. July 1-5, 1955. Moscow, Publishing House of the Academy of Sciences of the U.S.S.R., 1955. 330p. (In Russian)

A radioactive calcium isotope was used in a study of the effect of the pouring method on the distribution of non-metallic inclusions in the ingot. For this purpose powdered calcium oxide or silicate containing the radioactive isotope was added to the steel while pouring. The particle size of the powder varied mainly between 16 and 40 microns. A study was made of the distribution of the inclusions in the ingot caused by the first portions of the metal, entering in the mould inclusions which get into the ingot while it is being bottom or top poured, and of those which enter it during after-teeming the top of the ingot. The distribution of the inclusions in the ingot was investigated by contact autoradiography control of the surface of longitudinal specimens cut from 75- and 300-kg ingots. For the autoradiograms Soviet "XX" grade film was used. In some cases the data obtained by analysis of the autoradiograms were corroborated by counting the activity of precipitates of the non-metallic inclusions electrolytically isolated from the metal with a counter of the Geiger-Müller type. Analysis of the autoradiograms showed that in both pouring methods -- bottom and top pouring -- mainly the bottom part of the ingot is contaminated, and that the contamination is greater in the case of after-teeming. Radioactive inclusions which were brought into the ingot during after-teeming were found also in the top of the ingot. Under equal conditions of contamination of the incoming metal with radioactive inclusions less inclusions were found when the metal was bottom poured than when it was top poured. Autoradiograms show that a considerable part of the active inclusions remains in the central runner. During bottom pouring, part of the radioactive inclusions were carried into the surface of the ingot due to the movement of the metal in the mould under the action of the rising stream. (auth)

① 9

SUM 728, 28 Nov 1955

KUKLEV V. G.

СЛИТОК И СВОЙСТВА СТАЛИ

Д.Ф.Чернега	Исследование влияния электрошлакового обогрева прибыльной части [illegible] металла.
Ж.С.Пресняков Л.И.Крупман	Распределение неметаллических включений в слитках [illegible] стали.
Ю.А.Нехендзи Н.Г.Гиршович В.Я. [illegible]	Кинетика затвердевания [illegible] сплавов в [illegible] формах.
В.Г.Гуляев	Структурообразование в зависимости от температуры [illegible] стали.
С.А.[illegible] В.К.[illegible] А.С.Лебедев	Влияние толщины стенки [illegible] на качество отливок из сплавов на [illegible] основе.
В.Г.Куклев С.М.Гнучев	Поведение [illegible] включений в слитках [illegible] стали.
В.М.Тагеев Ю.Д.Смирнов	О связи дендритной и зональной химической неоднородности слитков и отливок в процессе кристаллизации стали.
В.М.Тагеев Ю.Д.Смирнов	Влияние выделения газов при кристаллизации стали на химическую неоднородность слитков и отливок.
А.Н.Морозов В.С.[illegible]	Механизм образования [illegible] в слитках [illegible] стали.
Ю.А.Нехендзи В.П.[illegible]	Поглощение водорода [illegible] при [illegible] формы.

Report submitted for the 5th Physical Chemical Conference on Steel Production, Moscow-- 30 Jun 1959.

VOINOV, S.G.; KALINNIKOV, Ye.S.; TOPIL'SKIY, P.V.; BOBKOVA, O.S.;
[illegible] V.G.; [illegible], V.P.; KOSOY, L.F.; SHALIMOV, A.G.;
Prinimali uchastiye: IOFFE, V.N.; CHABORENKO, N.I.;
IVANCHENKO, [illegible]; [illegible]KOVA, N.A.

Developing a procedure for the making of limestone and alumina semifinished products for the preparation of synthetic slag. Stal' 22 no.2:128-132 F '62. (MIRA 15:2)

(Slag)
(Electric furnaces)

SHALIMOV, A.G. (Moskva); KUKLEV, V.G. (Moskva)

Viscosity of lime-alumina slags. Izv. AN SSSR.Otd.tekh.nauk. Met. i topl. no.5:43-51 S-O '62. (MIRA 15:10)
(Slag) (Viscosity)

SHALIMOV, A. G.; KUKLEV, V. G.

Application of the SVL-57 viscosimeter for high temperature measurements. Zav. lab. 28 no.12:1526-1527 '62. (MIRA 16:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina.

(Viscosimeter)

ACCESSION NR: AP4040978 S/0147/64/000/002/0126/0133

AUTHOR: Kukiev, Ye. A.

TITLE: Approximate calculation of flight speed in a nonvertical dive, and determination of the loss in altitude and range according to the autopilot program of an unmanned aircraft with a turbojet engine

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 2, 1964, 126-133

TOPIC TAGS: dive flight speed, aircraft maneuver, autopilot program, unmanned aircraft, flight program

ABSTRACT: An approximate method is outlined for calculating the speed of a powerful turbojet aircraft in a nonvertical dive. The Ostoslavskiy formula is used, and engine thrust is taken into account as a constant. The results of calculations by this method for altitude drops less than 10 km almost coincide with the results of numerical integration. Expressions are derived for determination of the loss in altitude and range of an unmanned aircraft on entry into a dive, according to one of two proposed autopilot programs. Recommendations concerning the choice of program under conditions of

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ACCESSION NR: AP4040978

constant flight speed are given. Orig. art. has: 3 figures and 33 formulas.

ASSOCIATION: none

SUBMITTED: 14Nov63 ATD PRESS: 3051 ENCL: 00

SUB CODE: AC NO REF SOV: 004 OTHER: 000

Card 2/2

KUKLEV, Ye.A.

Stability of a flying platform with an automatic pilot under hanging conditions. Izv.vys.ucheb.zav.; av.tekh. 5 no.3: 34-45 '62. (MIRA 15:9)

(Stability of helicopters)
(Automatic pilot (Airplanes))

ACC NR: AP6036850 SOURCE CODE: UR/0147/66/000/004/0020/0022

AUTHOR: Kuklev, Ye. A.

ORG: none

TITLE: Statistical linearization of the nonlinear aerodynamic moment coefficient of the aircraft with respect to the angle of attack

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 4, 1966, 20-22

TOPIC TAGS: linear approximation, aircraft autopilot, aircraft guidance, aerodynamic stability, automatic control, aerodynamic moment, angle of attack

ABSTRACT: The statistical linearization of the nonlinear aerodynamic coefficient of the moment of an aircraft with respect to the angle of attack consists of replacing it by a linear coefficient which is equivalent in a probabilistic sense. The latter contains the statistical characteristic of nonlinearity and the coefficient of the moment increase with respect to the random component of the fluctuation of the angle of attack. The present paper gives the results of calculating the equivalent characteristics of the aerodynamic nonlinearity which are determined from wind tunnel tests and are approximated by two parabolas of the second order. The obtained equivalent coefficients of the moment increase can be used in the statistical

Card 1/2 UDC: 533.6.013.15

ACC NR: AP6036850

linearization of nonlinear equations for the aircraft motion under random disturbances due to atmospheric turbulence or errors in the control system. Orig. art. has: 1 figure and 8 equations. [06]

SUB CODE: 01, 12/ SUBM DATE: 06Nov65/ ORIG REF: 001

Card 2/2

KUKLEV, Ye.A.

Approximate calculation of the flight speed at inclined diving and the determination of the loss of altitude and range in the zone of the entrance into diving according to the program for a pilotless airplane with a turbojet engine. Izv.vys.ucheb.zav.;av.tekh. 7 no.2:126-133 '64.

L 41136-65 EEC-2/EWT(d)/EEC-4 Pn-4/Po-4/Pc-4/Pq-4/Pg-4/Pk-4/Pl-4 BC

ACCESSION NR: AP4048502 S/0147/64/000/004/0011/0019

AUTHOR: Kuklev, Ye. A.

TITLE: One method of computing, by means of an analog, the pitch angle dispersion of an aircraft moving in a turbulent atmosphere

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 4, 1964, 11-19

TOPIC TAGS: atmospheric turbulence, autopilot, aircraft pitch angle, pitch angle dispersion, wind velocity, aircraft motion simulation

ABSTRACT: A method is outlined which, [illegible] machines in order to estimate [illegible] makes use [illegible]

[illegible]

[illegible] in this article is that in horizontal flight the short-period motion of the aircraft

Card 1/3

ACCESSION NR: AP4048502

in terms of pitch is set up only by the vertical component of wind velocity $u_g(t$, which is small in comparison with the air speed of the aircraft V due to the occurrence of a disturbance in the angle of attack $\Delta\alpha_g(t) \approx u_g(t)/V$ ... on the lifting force disregarded. ... component $u_g(t)$ is a random st... distribution, has zero mathematical expectancy, is subject to the theorem of ergodicity, and may be characterized by the single-dimensional spectral density ... ω ... If ΩV is the circular frequency ... the plane in time, and ... is the ...

... possible to select with great effectiveness the transmission numbers for the auto... which will ensure maximum dyn... ... atmosphere ... pitch angle dispersion error. The transmission numbers can be easily varied on the analog by changing the gain factors set on the variable resistances which are used. The method also permits an estimation, according to the magnitude of the dispersion, of the effectiveness obtained in the use of the automatic pilot with the aircraft

Card 2/3

L 41136-65
ACCESSION NR: AP4048502

subject to atmospheric turbulence. The simulation block-diagram also, it is claimed, provides the capability of computing the dispersion of the solution according to other variables as well, including the flight altitude, by adding one more kinematic ratio to the initial equation system. Orig. art. has: 3 figures and 17 formulae.

ASSOCIATION: None

SUBMITTED: 20Jan64 ENCL: 00 SUB CODE: AC, DP

NO REF SOV: 008 OTHER: 006

L 60066-65 EEC(b)-2/EWA(h)/EWT(1) Pi-4/Pj-4/Pm-4/Pt-4/Pac-4/Peb JH
ACCESSION NR: AP5019014 UR/0286/65/000/012/0038/0039
621.385.632

43
B

AUTHOR: Kuklev, Yu. I.; Pchel'nikov, Yu. N.

TITLE: Traveling wave tube. Class 21, No. 171928

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 38-39

TOPIC TAGS: traveling wave tube, helical delay system

ABSTRACT: The proposed medium- or high-power traveling-wave tube (Fig. 1 of Enclosure) contains a helical delay system and an attenuator insert. The insert is in the form of a cavity absorber between the helix and the metal envelope. To improve the efficiency of the TWT and facilitate heat transfer from the absorber, the ... has a projection close to the absorber with an inner diameter smaller than the diameter of the rest of the TWT envelope. Orig. art. has: 1 figure. [TS]

ASSOCIATION: none

SUBMITTED: 15May64 ENCL: 01 SUB CODE: EC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4059

Card 1/2