"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, YEVGENIY YAKOVLOVICH

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REMEZ, YEVGENIY YAKOVLOVICH

Obshchiye vychislitel'nyye metody Chebyshevskogo priblizheniya (General calculation methods of Chebyshev's Approximation) Kiyev, Izd-vo Akademii Nauk Ukrainskoy SSR, 1957.

159 p. diagrs., graphs, tables.

At head of title: Akademiya Nauk Ukrainskoy SSR.

MEA

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, E. Ya.

2

Remez, E. Ya. On the limiting process of Pólya-Jackson-Julia and certain corresponding interpolation algorithms. Doklady Akad. Nauk SSSR (N.S.) 58, 1901-1904 (1947). (Russian)

The problems here are similar to those discussed in the two notes reviewed above. Given a set $E_N$ of $N$ points $x_{N1}<x_{N2}<\cdots<x_{NN}$ in $[a, b]$, the author considers the maximum of $\Phi$ over $E_N$ and the discrete average $[N^{-1}\sum_{j=1}^{N}|\Phi(x_{Nj})|^m]^{1/m}$, and then the minima (with respect to the $c$'s) of these maxima. Under certain conditions of uniformity of the distribution of the points of $E_N$ as $N\to\infty$ he obtains conclusions analogous to the preceding ones.

*A. Zygmund* (Chicago, Ill.).

Source: Mathematical Reviews, Vol No. 1

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, E.Ya.

Certain estimates of the order of approximation given in singular integrals. Dop.AN URSR no.5:3-9 '49. (MLRA 9:9)

1.Chlen-korrespondent AN URSR.2.Institut matematiki AN URSR.
(Approximate computation) (Integrals)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, E. YA.

Remez, E. Ya. Detailed investigations of limiting relations between power-mean and Čebyšev approximations. Akad. Nauk Ukrain. RSR. Zbirnik Prac' Inst. Mat. 1948, no. 10, 107–141 (1948). (Ukrainian. Russian summary)

Let $v_0(x), v_1(x), \cdots, v_{n+1}(x)$ be $n+1$ given continuous functions in the interval $0 \leqq x \leqq 1$, and let $c_1, c_2, \cdots, c_n$ be any numbers. Let

$$\Phi(x) = v_0(x) + \sum_1^n c_j v_j(x),$$

$$\delta_m[\Phi] = \delta_m(c_1, \cdots, c_n) = \left(\int_0^1 |\Phi(x)|^m dx\right)^{1/m},$$

$$\delta_0[\Phi] = \sup_{0 \leqq x \leqq 1} |\Phi(x)|$$

for $m > 1$. The problem of the existence and the uniqueness of the numbers $c_j$ minimizing $\delta_m[\Phi]$ was first discussed by Pólya [C. R. Acad. Sci. Paris 157, 840–843 (1913)] and Jackson [Trans. Amer. Math. Soc. 22, 117–128 (1921)] who also proved that $\delta_0[\Phi_m] \to \delta_0[\Phi_0]$ for $m \to \infty$, where $\Phi_m$ is the function minimizing $\delta_m$. Thus $\delta_0[\Phi_m] = (1+\alpha_m)\delta_0[\Phi_0]$ with $\alpha_m$ tending to 0 as $m \to \infty$. It is the study of the rapidity with which $\alpha_m$ tends to zero which is the main topic of the paper. It is shown that if all the $v_j$ satisfy Lipschitz conditions of positive order, then $\alpha_m = O(m^{-1} \log m)$. More precisely, if $v_j \tau \mathrm{Lip}\, \tau$, $\tau > 0$, for all $j$, then

$$\limsup (m\alpha_m/\log m) \leqq 1/\tau.$$

If all the $v_j$ have modulus of continuity $O(\log \delta^{-1})^{-1}$, then $\alpha_m = O(m^{-1})$. Examples show that these estimates are best possible. Corresponding, though less simple, theorems exist for general moduli of continuity. For general continuous $v_j$ the numbers $\alpha_m$ may tend to 0 arbitrarily slowly, at least for some values of $m$. *A. Zygmund* (Chicago, Ill.).

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, E. YA.

Source: Mathematical Reviews, Vol 10 No.8

Remez, E. Ya. On mean, uniform (Chebyshevian) and quasiuniform approximations. Doklady Akad. Nauk SSSR (N.S.) 60, 199–202 (1948). (Russian)

The author calls the numerical functions $v_0, v_1, \cdots$ in the space $E$ metrically independent if, for any $c_i$ ($\sum|c_i|>0$), $E_1=E_x[\sum c_i v_i(x)=0]$ implies $\mu(E_1)<\mu(E)$. Lemma 1. In the above case it is possible to find $g$, independent of the choice of the $c_i$'s, such that $\mu(E_1)\leqq g<\mu(E)$. Lemma 2. If in the above case $\max_i|c_i|=1$ then to every $\epsilon$, $0<\epsilon<\mu(E)-g$, there exists an $\eta>0$ such that $\mu(E_x[|\sum c_i v_i(x)|<\eta])\leqq g+\epsilon$. In the following the author fixes $c_0=1$ and defines

$$\delta_m(\phi)=[(\mu E)^{-1}\int_E|\phi(x)|^m dx]^{1/m},\quad \delta_0^*(\phi)=\operatorname{ess\,max}|\phi(x)|$$

for $x\epsilon E$, $\delta_0(\phi)=\max|\phi(x)|$ for $x\epsilon E$, where $\phi=v_0+\sum c_i v_i$. Suppose $\phi_m$ is the minimizing function for $\delta_m$, $\phi_0^*$ for $\delta_0^*$ and $\phi_0$ for $\delta_0$; the author proves the following extension of a theorem proved by Pólya [C. R. Acad. Sci. Paris 157, 840–843 (1913)] and Jackson [Trans. Amer. Math. Soc. 22, 117–128 (1921)]: $\lim_{m\to\infty}\delta_0^*(\phi_m)=\delta_0^*(\phi_0^*)$. If all $v_i$'s are almost everywhere bounded, $\lim_{m\to\infty}\delta_0(\phi_m)=\delta_0(\phi_0)$.

*František Wolf* (Berkeley, Calif.).

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ E. YA

Remez, E. Ya. On series with alternating sign which may be connected with two algorithms of M. V. Ostrogradskiĭ for the approximation of irrational numbers. Uspehi Matem. Nauk (N.S.) 6, no. 5(45), 33–42 (1951). (Russian)

Every $\omega$ in $0<\omega<1$ has an expansion

$$\omega=\frac{1}{p_0}\,\frac{1}{p_0p_1}+\frac{1}{p_0p_1p_2}\,\frac{1}{p_0p_1p_2p_3}+\cdots, \tag{1}$$

where $p_0, p_1, \cdots$ are integers and $0<p_0<p_1<p_2<\cdots$, and also an expansion

$$\omega=\frac{1}{q_0}\,\frac{1}{q_1}\,\frac{1}{q_2}\,\frac{1}{q_3}+\cdots, \tag{2}$$

where $q_0, q_1, \cdots$ are integers such that $q_{n+1}\geqq q_n(q_n+1)$. If $\omega$ is irrational, these expansions are unique; if $\omega$ is rational, there is an ambiguity in the final term analogous to that for continued fractions. These expansions and related investigations have been found in the posthumous papers of M. V. Ostrogradskiĭ preserved in the State Public Library at Kiev.

The expansion (1) is obtained by the algorithm

$$1=p_n\alpha_n+\alpha_{n+1},\quad 0\leqq\alpha_{n+1}<\alpha_n,$$

where $\alpha_0=\omega$ and $\alpha_1, \alpha_2, \cdots$ are determined in order. The expansion (2) is similarly obtained from the algorithm $q_0\cdots q_{n-1}=q_n\beta_n+\beta_{n+1}$, $0\leqq\beta_{n+1}<\beta_n$ where $\beta_0=\omega$.

The errors in taking the first $n+1$ terms of (1) and (2) as approximations to $\omega$ are $(-1)^{n+1}(p_0\cdots p_n(p_n+1))^{-1}\theta$ where $0\leqq\theta<1$ and $(-1)^{n+1}(q_n(q_n+1))^{-1}\phi$ where $0\leqq\phi<1$ respectively. If $\omega$ is a root of an algebraic equation then $p_0, p_1, p_2, \cdots$ or $q_0, q_1, \cdots$ can be obtained by transforming the equation successively into one for $\alpha_1, \alpha_2, \cdots$ or $\beta_1, \beta_2, \cdots$ respectively. Thus the root of Wallis's equation

$$x^3-2x-5=0$$

is given as $2.094553-\theta\times 2.1\times 10^{-6}$ $(0<\theta<1)$ and as $2.09455148132-\phi\times 2.6\times 10^{-10}$ $(0<\phi<1)$ by the first three terms of (1) and (2) respectively. Compare Newton's method which with three steps gives $x$ only to eight decimal places, a supplementary investigation being required to determine the error [E. T. Whittaker and G. Robinson, The calculus of observations . . . , 2d ed., Blackie, London and Glasgow, 1926, pp. 86, 95].

*J. W. S. Cassels.*

Smith

Source: Mathematical Reviews, Vol. 13, No. 2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Remez, E. Ya.

2

Remez, E. Ya. On Čebyšev approximations in a complex region. Doklady Akad. Nauk SSSR (N.S.) 77, 965–968 (1951). (Russian)

The author studies the problem of a "best" approximate solution of a system $\sum_1^n a_i^{(\alpha)} s_i - l^{(\alpha)} = 0$ in the complex domain. The measure of the approximation is the maximum with respect to $\alpha$ of the absolute value of the left hand sides. The solutions of the problem form a convex set in a complex Euclidean $n$-space. He studies the problem for subsystems of the above and proves several theorems.

*František Wolf* (Berkeley, Calif.).

Source: Mathematical Reviews, Vol 13 No.2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, E. Ya.

1

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Remez, E. Ya. On graphic-analytic solution of some problems of Čebyšev approximation. Doki. Akad. Nauk SSSR (N.S.) 101 (1955), 409–412. (Russian)

Remez, E. Ya. The method of graphic-analytic solution of certain problems of Čebyšev approximation. Ukrain. Mat. Ž. 7 (1955), 71–90 (1 plate). (Russian)

Application of the characteristics of that curve $f$ out of a given family $F$ which has smallest maximum deviation from a given set $S$ [Motzkin, Bull. Amer. Math. Soc. 55 (1949), 789–793; MR 11, 101] to the cases where $F$ consists of all straight lines, or of all straight lines through the origin. For finite $S$ inspection of its graph gives the points of maximum deviation, and an elementary follow-up computation furnishes the coefficients of the equation of $f$. *T. S. Motzkin* (Los Angeles, Calif.).

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REMEZ, E. Ya.

(2)

Remez, E. Ya. Some questions of Čebyšev approximation in a complex region. Ukrain. Mat. Žurnal 5, 3–49 (1953). (Russian)

This is a complete exposition of results announced earlier [Doklady Akad. Nauk SSSR (N.S.) 77, 965–968 (1951); see also Praci Sičnevoï Sesiï Akad. Nauk URSR. Dopovidi Viddilu Fiz.-Him. Mat. Nauk 2, 207–214 (1944); these Rev. 13, 99; 7, 520; V. K. Ivanov, Mat. Sbornik N.S. 28(70), 685–706 (1951); 30(72), 543–558 (1952); these Rev. 13, 119; 14, 254]. Let $\mathfrak{G}$ be a bounded set of points $Q=(a_1, a_2, \cdots, a_n, l)$ in $(n+1)$-dimensional complex Euclidean space $K^{n+1}$. For every $z=(z_1, \cdots, z_n) \in K^n$, let $L(z)=\sup_{Q \in \mathfrak{G}}|l^n-\sum_{k=1}^n a_k z^k|$. The problem is to find points $z$ such that $L(z)$ is a minimum. For many purposes, $\mathfrak{G}$ is taken to be closed and convex and to contain $e^{i\theta}\cdot Q$ along with $Q$ $(0<\theta<2\pi)$. A geometric description of $L(z)$ is first given, and a geometric solution of the problem of minimizing $L(z)$. Certain finite subsets of $\mathfrak{G}$ are introduced, called by the author Čebyšev subsystems. It is shown that the $z$'s minimizing $L(z)$ are a convex set (in the usual real sense) in $K^n$, which may be a single point. A detailed analysis of the possibilities is given. It is proved that every $z_0$ minimizing $L(z)$ also minimizes $L(z)$ for every Čebyšev subsystem of $\mathfrak{G}$, with the same value for the minimum. A number of other concepts are introduced and results obtained.

*E. Hewitt* (Seattle, Wash.).

Mathematical Reviews
May 1954
Analysis

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ANTSELIOVICH, Yefim Samoylovich,[deceased],; REMEZ, G.A.,red.; FRIDKIN, A.M., tekhn. red.; LARIONOV, G.Ye.,tekhn. red.

[Radio measurements] Radiotekhnicheskie izmereniia. Moskva, Gos. energ. izd-vo, 1958. 366 p. (MIRA 11:12)
(Radio measurements)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

OSIPOV, K.D.; PASYNKOV, V.V.; REMEZ, G.A., red.; GOLOVANOVA, L.V., red.; KOCHETKOVA, N.A., red.; KUKOLEVA, T.V., red.

[Reference book on radio measuring devices] Spravochnik po radioizmeritel'nym priboram. Pod red. G.A.Remeza. Moskva, Sovetskoe radio. Pt.5. [Supplement] Dopolnitel'naia. 1964. 397 p. (MIRA 17:6)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, GRIGORIY ABRAMOVICH

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Kurs Osnovnykh Radiotekhni Cheskikh Izmereniy

(Course in basic Radio-Engineering Measurement) Moskva, Svyaz'izdat, 1955

446 P. Illus., Diagrs., Tables.

Bibliography: P. (445)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

OSIPOV, Konstantin Dmitriyevich; PASYNKOV, Vsevolod Vladimirovich; REMEZ, G.A., red.; ARENBERG, N.Ya., red.; SMUROV, B.V., tekhn.red.

[Handbook on radiomeasuring devices] Spravochnik po radioizmeritel'nym priboram. Moskva, Izd-vo "Sovetskoe radio." Pt.1. [Devices for measuring current, voltage, capacity, and parameters of the circuit elements] Pribory dlia izmereniia toka, napriazheniia, moshchnosti i parametrov elementov skhem. Pod red. G.A.Remeza. 1959. 220 p. (MIRA 13:2)

(Radio measurements--Equipment and supplies)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

OSIPOV, K.D.; PASYNKOV, V.V.; REMEZ, G.A., red.; MASHAROVA, V.G., red.; SMUROV, B.V., tekhn.red.

[Handbook on devices for radio measurements] Spravochnik po radioizmeritel'nym priboram. Pod red. G.A.Remeza. Moskva, Izd-vo "Sovetskoe radio." Pt.3. [Instruments for measuring the form of oscillations] Pribory dlia izmereniia formy kolebanii. 1959. 170 p. (MIRA 13:4)

(Electronic measurements)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

OSIPOV, K.D.; PASYNKOV, V.V.; REMEZ, G.A., red.; SUKHANOV, Yu.I., red.; SMUROV, B.V., tekhn.red.

[Handbook on radio measuring devices] Spravochnik po radioizmeritel'nym priboram. Pod red. G.A.Remeza. Moskva, Izd-vo "Sovetskoe radio." Pt.4. [Special measuring devices and current sources] Spetsial'nye izmeritel'nye pribory i istochniki pitaniia. 1959. 152 p. (MIRA 13:5)

(Radio measurements) (Radar)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

PHASE I BOOK EXPLOITATION SOV/4210

Remez, Grigoriy Abramovich

Radioizmereniya (Radio Measurements) 2nd ed., rev., Moscow, Svyaz'izdat, 1960. 319 p. Errata slip inserted. 30,000 copies printed.

Ed.: Ye.S. Novikova; Tech. Ed.: S. F. Karabidova.

PURPOSE: This is a textbook intended for students of communications tekhnikums.

COVERAGE: The textbook, approved by the Ministry of Communications, USSR, covers the fundamentals of radio measurements used in courses of communications tekhnikums. Methods for testing specific apparatus (transmitters, receivers, amplifiers, etc.) are not treated. In this 2nd edition, chapters on the theory of errors in radio measurements and on the measurement of power at high frequencies have been included. Descriptions of methods of measuring the parameters of systems having distribution constants, methods of measuring interference, and measurements of frequency, power, the coefficient of traveling waves, impedance, etc., at ultra-high frequencies are presented. Tables containing basic data on a number of measuring instruments are also included. No personalities are mentioned. There are no references.

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, G.A.

REMEZ, G.A., LITVIN, V.M., KUKIN, N.P., CHAPLINSKIY, A.B.

"Radio" (Radiodelo), edited by G.A. Remez. Voyennoye Izdatel'stvo, 327 pp., 1947.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, G. A.

Technique of Centimeter Wave Measurements I (Tekhnika izmerenii na santimetrovykh volnakh I), Sovetskoye radio, 1949, 516 pp.

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Grigoriy Abramovich

[A course in the fundamentals of radio measurment] Kurs osnovnykh radiotekhnicheskikh izmerenii. Izd. 2-oe. Moskva, Svyaz'izdat, 1956. 447 p. (MLRA 10:1)

(Radio measurements)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

[illegible], [illegible] A. 2/[illegible]

USSR/Academy of Sciences May/Jun 49

"New Books" 1 p

"Radiotekh" Vol IV, No 3

Lists five books: P. V. Shmakov's "Color Television," M. V. Belyakov's "The Influence of Meteorological Conditions on the Progation of Ultrashort Waves," G. A. Remez's "Radio Testing," G. Khol'man's "Gneration and Amplification of Decimeter and Centimeter Waves," and N. P. Bororoditskiy and I. D. Fridberg's "High-Frequency Inorganic Dielectrics."

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

HEMEZ, Grigoriy Abramovich; VALITOV, R.A., redaktor; GOROKHOVSKIY, A.V., redaktor; SOKOLOVA, R.Ya., tekhn. redaktor.

[Course in the basic radio measurements] Kurs osnovnykh radiotekhnicheskikh izmerenii. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1955 446 p. (MLRA 9:5)
(Radio measurements)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

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REMEZ, L. I.

28022. OSOKIN, N. E. i REMEZ, L. I. -- K voprosv o kozhevnikovskoy epilepsii -- V ogl. 2-y Avt: Remez A. I. Yubileynyy sbornik khirurg Rabot. Posvyashch. Prof. Shilovtsevu. Kuybyshev. 1949, S. 40-46. CHERNETSOVA, E. S. pak i beremennost'.-- SM. 28017.

SO: Letopis' Zhurnal'nykh Statey. Vol. 37,1949.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SOV/137-58-11-22782

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 137 (USSR)

AUTHOR: Remez [Remezs, M.]

TITLE: The Cutting of Metals With a Liquified Propane-butane Mixture (Rezka metalla szhizhennoy propan-butanovoy smes'yu) in Latvian

PERIODICAL: Padomju Latvijas tautas saimniecība, 1957, Nr 1, pp 49-50

ABSTRACT: Ref. RzhMet, 1958, Nr 8, abstract 17193

Card 1/1

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, M.; TARASOV, I., red.

[Using propane-butane mixture for cutting metals] Primenenie propan-butanovoi smesi dlia rezki metallov. Riga, Latviiskii Respublikanskii in-t nauchno-tekhn. informatsii i propagandy, 1963. 45 p. (MIRA 17:4)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, M

SOV/137-58-8-17193

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 142 (USSR)

AUTHOR: Remez, M.

TITLE: Cutting of Metals With the Aid of a Liquefied Propane-butane Mixture (Rezka metalla szhizhennoy propanobutanovoy smes'yu)

PERIODICAL: Narodnoye kh-vo Sov. Latvii, 1957, Nr 1, pp 49-50

ABSTRACT: In the course of construction of a TETs (Thermal electrical power station) in the city of Riga, the trust "Lenpromenergomontazh" developed a procedure for cutting of metal by means of a liquefied propane-butane mixture (PBM) which is commonly employed for household purposes in that city. In normal metal-cutting operations, one tank of PBM is consumed within a period of seven days. The cost and the consumption of the PBM is, respectively, 1/5 and 1/2 that of $C_2H_2$ (the low heat value of the PBM is 1.7 times greater than that of $C_2H_2$). The absence of acetylene generators increases the productivity of the gas-cutting unit by 15-20%, and the fact that the pressure of the PBM remains constant even as the latter is consumed permits the employment of reducers of the RZhGD-1 and RD-1 type capable of regulating pressure within the limits of 0.05

Card 1/2

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SOV/137-58-8-17193

Cutting of Metals With the Aid of a Liquefied Propane-butane Mixture

and 1.5 at without requiring manometers costing 80 rubles apiece. The substitution of PBM for $C_2H_2$ resulted in a 200,000 rubles annual saving in the Riga sections of the trust. Wherever possible it is recommended that liquefied PBM be employed for cutting of metal, it should be delivered to the construction site on ZiL-150 or GAZ-51 trucks, the further distribution of it being accomplished with the aid of a local transportation net.

V.S.

1. Metals—Processing 2. Butane—Performance
3. Propane—Performance

Card 2/2

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, M.B., kand.tekhn.nauk

"Prestressed reinforced concrete" by N. M. Levanov. Reviewed by M. B. Remez. Bet. i zhel.-bet. no.5:240 My '61. (MIRA 14:6)

(Prestressed concrete)
(Levanov, N.M.)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, M.Ya., inzh.

Design of pipelines for thermal electric power plants.
Energ. stroi. no.4:33-34 '65. (MIRA 18:12)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, M.Ya., inzh.

Improving the repairing techniques of electric-welding conductors. Elek sta. 30 no.2:89 F '59. (MIRA 12:3)
(Electric welding--Equipment and supplies)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, M.Ya., inzh.

Using compressed propane-butane mixture for cutting metal. Elek.sta. 28 no.10:79 '57. (MIRA 10:11)

(Metal cutting)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, M. YA

PA 32/49T21

USSR/Engineering Jun 48
Power Plants - Installation
Turbogenerators

"Erecting a 16,000-Kilowatt Turbounit Without a Bridge Crane," M. Ya. Remez, Engr, 1½ pp

"Elek Stants" Vol XIX, No 6

Describes procedure in detail, with three sketches.

FDB 32/49T21

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, M. YA. PA 32/49T21

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, R.I.

Iatrogenicity and the cardiovascular system. Vop.pat.krovi i krovoobr. no.6:225-228 '61. (MIRA 16:3)
(DIAGNOSIS--PHYSIOLOGICAL ASPECTS)
(CARDIOVASCULAR SYSTEM--DISEASES)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

124-58-6-6712

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 6, p 59 (USSR)

AUTHOR: Remez, U. V.

TITLE: An Investigation of the Amplitudes and the Phases of the Harmonic Lateral Roll of a Ship in a Regular Swell (Issledovaniye amplitud i faz garmonicheskoy bortovoy kachki sudov na regulyarnom volnenii)

PERIODICAL: Tr. Nikolayevskogo korablestroit. in-ta, 1956, Nr 8, pp 87-113

ABSTRACT: The article starts with a diagram for determining the amplitudes and phases of the oscillatory motions of ships with due account of the entrained masses of water and the resistance exerted by the water to the roll of the ship, compiled according to S. N. Blagoveshchenskiy [Spravochnik po teorii korablya (Manual of the Theory of the Ship), 1950]. The main part of the investigation deals with the influence of different mechanical and hydrodynamic parameters of the angular motion on the amplitudes and phases of the forced oscillations of a ship. The oscillations of a ship are scrutinized relative to various systems of coordinates. The values of the theoretical coefficients characterizing the roll of a ship on a regular swell are compared with the values of the

Card 1/2

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124-58-6-6712

An Investigation of the Amplitudes and the Phases (cont.)

coefficients obtained as a result of the analysis of actual seagoing experience. The importance of the gyroscopic moments generated during the roll in the machinery aboard ship having high-speed rotating shafts perpendicular to the plane of symmetry is emphasized. Graphically illustrated examples are given.

V.B.Dragomiretskiy.

1. Ships--Performance 2. Ships--Roll

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

MAMUNYA, A.U.; REMEZ, Ye.O.; SYCH, P.K.

Automation of mash preparation in the manufacture of alcohol from grain and potato raw materials. Trudy Ukr.NIISP no.8:93-100 '63. (MIRA 17:3)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

MAMUNYA, A.U.; REMEZ, Ye.O.

Automation of mash preparation under the conditions of continuous rapid boiling to the pulp method. Spirt.prom. 29 no.5:23-25 '63. (MIRA 17:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut spirtov i likero-vodochnoy promyshlennosti.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

MAMUNYA, A.U.; GARBENKO, V.G. [Hrabenko, V.H.]; RAYEV, Z.A. [Raiev, Z.A.]; REMEZ, Ye.O. [Remez, IE.O.]

Preparation of molasses for the production of alcohol and baker's yeast. Kharch.prom. no.4:41-45 O-D '63. (MIRA 17:1)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

86385
S/020/60/135/002/005/036
C111/C222

16.4100

AUTHORS: Remez, Ye.R., Koromyslichenko, V.D.

TITLE: Vl. Markov's Problem for Polynomials of a System of Chebyshev's Functions and the Concept of a Regular T-System

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 2, pp. 266 - 269

TEXT: Extending the classical question of V.A. Markov (Ref. 1) who asked for rational polynomials deviating least from zero in the sense of Chebyshev on a given interval, S.N. Bernshteyn (Ref. 5) introduced the T - systems $\{\varphi_\nu(x)\}_0^n$ of functions continuous on $[a,b]$ having the property that every polynomial $F(x) = \sum A_\nu \varphi_\nu(x)$ $(\sum |A_\nu| > 0)$ has not more than n zeros on $[a,b]$. In order to generalize the classical results (Ref. 1) the authors introduce the following specialization of the notion : $(a \leq x \leq b)$
Definition 1 : The T - system $\{\varphi_\nu(x)\}_0^n$ is called regular if every polynomial $F(x) \not\equiv$ const generated from it has not more than n + 1 maximal deviation points on $[a,b]$.

Card 1/3

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86385

Vl. Markov's Problem for Polynomials of a System of Chebyshev's Functions and the Concept of a Regular T-System

S/020/60/135/002/005/036
C111/C222

Definition 2 : If a regular T-system is a TM - system (i.e. that every partial system $\{\varphi_\nu(x)\}_0^k$ is a T-system too, cf (Ref. 7)), then it is called a regular TM-system.
For the justification of the definitions the authors prove the existence of non-regular T-systems.
Two sufficient marks for the regularity are given :
I. The regularity of the T-system $\{\varphi_\nu(x)\}_0^n$ $(a \leq x \leq b)$ is guaranteed in all cases where among its polynomials $F(x)$ there is a $F^*(x) = \sum A_\nu^*(x)\varphi_\nu(x) \equiv 1$.
II. The regularity is guaranteed for a T-system $\{\varphi_\nu(x)\}_0^n$ $(a \leq x \leq b)$ with $\zeta$ ($\zeta = 1,2$ or $0$) fixed zeros if the polynomials $F(x)$ ($\not\equiv$ const) have a derivative $F'(x)$ in $(a,b)$ which vanishes at most in $n - 1 + \zeta$ points.
The authors give 10 examples of TM-systems with fixed zeros being regular according to the mark II, e.g. 8) $\{e^{-\frac{x}{2}} x^\nu\}_{\nu=0}^n$ on $[0, \infty]$.
Definition 3 : A system regular on $[a,b]$ is called regular in a strengthened

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

86385

Vl. Markov's Problem for Polynomials of a System of Chebyshev's Functions and the Concept of a Regular T-System

S/020/60/135/002/005/036
C111/C222

sense if it satisfies the conditions of mark II with respect to $F'(x)$.

E.g. the system $\varphi_0(x) = \frac{1}{1+x}$, $\varphi_1(x) = x$ $(0 \leq x \leq 1)$ is regular, but not regular in the strengthened sense.

Generalizing the classical results it holds :

Writing for a regular T-system $\{\varphi_\nu(x)\}_0^n$ the generalization of the problem of V.A. Markov in the terms of the general Chebyshev approximation process (Ref. 7) for a (continuous infinite) system of incompatible equations with n free parameters - unknowns, then the mentioned incompatible system of equations will always have a single Chebyshev subsystem (irreducible) if the existence of at least one non - degenerated Chebyshev solution ($F^0(x) \neq$ const) is assumed. - There are 9 Soviet references.

ASSOCIATION: Institut matematiki Akademii nauk USSR (Mathematical Institute of the Academy of Sciences Ukr. SSR)

PRESENTED: June 6, 1960, by N.N. Bogolyubov, Academician

SUBMITTED: May 19, 1960

Card 3/3

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

AUTHOR: Remez, Ye.R. SOV/41-10-3-5/14

TITLE: On the Problem of the Algebraic Minimax of a Finite System of Linear Equations. II (End) (O zadache algebraicheskogo minimaksa konechnoy sistemy lineynykh uravneniy. II (Okonchaniye))

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1958, Vol 10, Nr 3, pp 289 - 298 (USSR)

ABSTRACT: The present second and last part of the publication (see Ukrainskiy matematicheskiy zhurnal Vol 10, Nr 2) contains § 4 with the continuation of the investigation of a multivalent solution. The author discusses the question of the determination of a unique solution which is optimum in the more rigorous sense. He considers normal and non properly normal solutions.
There are 2 Soviet references.

SUBMITTED: December 1, 1957 (Kiyev)

Card 1/1

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, YE. YA.

Sur la Détermination des Polynômes d'Approximation de Dégré donné Krkh., Zap. Matem. t-Va (4), 10 (1934), 41-64.

Sur un Procédé Convergent d'Approximations Successives pour Déterminer les Polynômes d'Approximation. C. R. Acad. Sci., 198 (1934), 2063-2065.

Sur le Calcul Effectif des Polynômes d'Approximation de Tchebycheff. C. R. Acad. Sci., 19 (1934), 337-340.

Ob Ostatochnykh Chlenakh Nekotorykh Formul Priblizhennogo Analiza. Dan, 26 (1940), 130-134.

O Srednikh Stepennykh Priblizheni Yakh 1 Priblizheniyakh Po Printsipu Naimen' shikh Kvadratov. Matem. SB., 9 (51), (1941), 437-450.

Srednestepennyye Priblizheniya i Priblizheniya Po Printsipu Naimen'shikh Kvadratov. Dah, 28 (1940), 397-400.

Pro Deyaki Klasi Liniynikh Funktsionaliv u Prostorakh $S_R$ Ta pro Ostatkovi Chleni. Formul Nablizhenogo Analizu. Kiev, Zh. in-ta Matem. an USSR, 3 (1939), 21-62.

Sur l'Interpolation des Fonctions Qui sont d'Allure Irrégulière dans l'Intervalle Donné. Kiev, Zh. in-ta Matem. an USSR, 1 (1937), 9-51.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

OSTROGRADSKIY, Mikhail Vasil'yevich [deceased]; SHTOKALO, I.Z., akademik, otv. red.; BOGOLYUBOV, N.N., akademik, otv.red.toma; GNEDENKO, B.V., akademik, red.; ISHLINSKIY, A.Yu., akademik, red.; REMEZ, Ye.Ya., red.; SAVIN, G.N., akademik, red.; SOKOLOV, Yu.D., red.; SMIRNOV, V.I., akademik, red.; YUSHKEVICH, A.P., prof., red.; POGREBYSSKIY, I.B., dotsent, red.; SHTELIK, V.G., red.izd-va; RAKHLINA, N.P., tekhn.red.

[Collected works in three volumes] Polnoe sobranie trudov v trekh tomakh. Kiev, Izd-vo Akad.nauk USSR. Vol.1. 1959. 310 p. (MIRA 12:8)

1. AN USSR (for Shtokalo, Gnedenko, Ishlinskiy, Savin). 2. Chlen-korrespondent AN USSR (for Remez, Sokolov).
(Science)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, YE. YA. con't.

O Nekotorykh Klassakh Lineynykh Funktsionalov V Prostranstvakh Sr 1 ob ostatochnykh Chlenakh Formul Priblizhennogo Analiza, I Kiev, Trudy in-ta Matem. An USSR, 3(1939), 21-62.

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

Also: Pro Deyaki Klasi Liniynikh Funktsionaliv U Prostorakh. Sr Ta Pro Octatkovi Cheni Formulnablizhengo Analizu. Kiev, Zh. in-ta Matem. an USSR, 4 (1940), 47 -81.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.

Refined consideration of the extremal relations between mean successive and Chebyshev approximations. Part 2. Zbir.prats' Inst.mat.AN URSR no.11:24-35 '48. (MIRA 9:9)
(Approximate computation) (Aggregates)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

1. [illegible], Ye. Ya.

2. USSR (600)

4. Approximate Computation

7. Certain equestions of Chebyshev's approximations in a complex domain. Ukr. mat. zhur. 5, No. 1, 1953.

A report heard at the 29 Jan 52 session of the Sci Council of the Inst. of Math., AS [redacted] UkrSSR; original results and general plan were given in a Jan 51 report. The author studies the principal problems in approximating a numerical function f(Z) by linear combinations of other given numerical functions of the form $\sum_{k=1}^{n} z_k \phi_k(z)$, where $z_1, \ldots, z_n$ are the numerical values of the parameters subject to detm and where Z can be treated as an abstract argument running over a given set E.

250T54

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.

"Elements of the theory of functions of complex variables." IU.D. Sokolov, Reviewed by E.IA. Remez. Ukr.mat.zhur. 7 no.4:474-478 (Functions of complex variables) (Sokolov, IUriii Dmitrievich, 1896-)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, YE. YA.

USSR/Mathematics - Chebyshov's problems

Card 1/1 Pub. 22 - 4/49

Authors : Remez, Ye. Ya.

Title : About grapho-analytical solutions of some problems of the Chebyshov approximation

Periodical : Dok. AN SSSR 101/3, 409-412, Mar 21, 1955

Abstract : Grapho-analytical solutions are analyzed for Chebyshov-type problems in which the parameters satisfy the I, II & III conditions. Exemplany solutions of I, II, III are analyzed separately. A strictly analytical formulation of the solution for the III case problems is presented. Five references: 2 USSR, 1 German, 1 Spanish, 1 British (1911-1938). Graph.

Institution : The Acad. of Sc., Ukr. SSR, Institute of Mathematics

Presented by : Academician A. N. Kolmogorov, December 14, 1954

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, YE. YA.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Paulauskas, V. K. (Vil'nyus). On the Approximations of Functions With Their Derivatives. 95

Mention is made of Kolmogorov, A. N.

Polozhiy, G. N. (Kiyev). Integration With Respect to Conjugated Variables. 95-96

Mention is made of Lukomskaya, M. A. and Markushevich, A. I.

There are 5 references, 4 of which are USSR, and 1 English.

Rakhmanov, B. N. (Saratov). On Some Classes of Analytic Functions. 96

Remez, Ye. Ya. (Kiyev). Some Problems Connected With Analyzing the Unique or Multivalued Solution of the Chebyshev Problem for Incompatible Systems of Linear Equation. 97-98

Card 30/80

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.

On an effective solution of systems of incompatible linear equations according to Chebyshevskii's principle of the best uniform approximation. Dop.AN URSR no.4:315-320 '56.

(MIRA 9:12)

1. Chlen-korrespondent Akademii nauk USSR.2.Institut matematiki Akademii nauk URSR.

(Linear equations)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, YE. YA.

1-F\W

Remez, E. Ya. Questions of uniqueness or multiplicity of solutions of the Čebyšev problem for a system of incompatible linear equations and the concept of a normal Čebyšev solution. Ukrain. Mat. Ž. 8 (1956), 34–53. (Russian)

Whereas the solutions of the minimax error problem $\min_x \max_i |\varepsilon_i|$, $\varepsilon_i = \sum_{k=1}^{n} a_{ik}x_k + b_i$ with rank $(a_{ik}) = n$ form a convex polyhedron, only one, the "normal" solution satisfies the strong extremization requirement $\min_x{}^* \varepsilon$: that the set of $|\varepsilon_i|$, arranged in decreasing order, precede lexicographically, or coincide with, the corresponding set for every other $x$. Also a numerical example, history, and literature. {Reviewer's remark: the same idea is applicable to best solutions of (not necessarily incompatible) inequalities: among them, the normal solutions always form a, possibly empty, linear manifold.}

*T. S. Motzkin* (Los Angeles, Calif.).

MT

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Yevgeniy Yakovlevich; GNEDENKO, B.V., akademik, otvetstvennyy redaktor; POLONSKIY, I.L., redaktor izdatel'stva; KRYLOVSKAYA, N.S., tekhnicheskiy redaktor

[General calculation methods of Chebyshev approximation] Obshchie vychislitel'nye metody Chebyshevskogo priblizheniia; zadachi s limeino vkhodiashchimi veshchestvennymi parametrami. Kiev, Izd-vo Akad. nauk USSR, 1957. 454 p. (MLRA 10:5)

1. AN USSR. (for Gnedenko)
(Approximate computation)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya. (Kiyev)

Fixed deflection points of solutions of Chebyshev's approximation problems with linearly entering parameters. Ukr.mat.zhur. 9 no.1: 44-65 '57. (MLRA 10:5)

(Approximate computation)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

OSTROGRADSKIY, Mikhail Vasil'yevich; SMIRNOV, V.I., akademik, red.; GNEDENKO, B.V.; MARON, I.A., dotsent; ANTROPOVA, V.I., dotsent; POGREBYSSKIY, I.B., dotsent; POLYAKHOV, N.N., prof.; REMEZ, Ye.Ya., prof.; SMIRNOV, V.I., akademik; FIKHTENGOL'TS, G.M., prof.; TRAVIN, N.V., red.izd-va; PEVZNER, P.S., tekhn.red.

[Selected works] Izbrannye trudy. Red. V.I. Smirnova. Stat'ia B.V. Gnedenko i I.A. Marona. Primechaniia V.I. Antropovoi i dr. Izd-vo Akad.nauk SSSR, 1958. 583 p. (MIRA 11:12)

1. Deystvitel'nyy chlen AN Ukrainskoy SSR (for Gnedenko).
(Calculus) (Mathematical physics) (Mechanics)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.

Structure of formulas of mechanical quadratures permitting a two-sided numerical evaluation of solutions of differential equations [with summary in French]. Ukr.mat.zhur. 10 no.4: 413-418 '58. (MIRA 12:1)

(Differential equations)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.

Method of successive Chebyshev interpolations and some variants of its realization. Ukr. mat. zhur. 12 no.2:170-180 '60. (MIRA 13:10)

(Interpolation)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 33991-65 EWT(d) IJP(c)

ACCESSION NR: AP5007651 S/0020/65/160/006/1265/1268

17
16
B

AUTHOR: Remez, Ye. Ya.

TITLE: Finding boundary solutions for a system of linear inequalities and the method of equalizing slopes

SOURCE: AN SSSR. Doklady, v. 160, no. 6, 1965, 1265-1268

TOPIC TAGS: linear programming 16

ABSTRACT: The author gives a method for finding an especially important category of boundary solutions of a system of linear inequalities of type

$$\varphi_i(x) \equiv \sum_{j=1}^{n} a_{ij}x_j \leqslant c_i \quad (i = 1, \ldots, m). \qquad (1)$$

(i.e., solutions of a system of linear inequalities (1) satisfying some maximal subsystem of linearly independent boundary equations). This is done on the basis of simple considerations and an easily accessible computational model by means of the standard procedure of Jordan exclusion. The method is iteratively applied either autonomously or as an elementary computation time of a single-phase simplex-process of linear programming. The author shows the application of his algorithm

Card 1/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 33991-65
ACCESSION NR: AP5007651

as the resolving moment of standardization and effectivization of the method of equalizing slopes for constructing solutions of problems of Chebyshev and generalized-Chebyshev minimax type. Orig. art. has: 11 formulas.

ASSOCIATION: Institut matematiki Akademii nauk UkrSSR (Institute of Mathematics, Academy of Sciences, UkrSSR)

SUBMITTED: 01Sep64 ENCL: 00 SUB CODE: MA

NO REF SOV: 008 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 8442-65 EWT(d) IJP(c)/ASD(a)-5/ASD(d)/AFWL/ESD(dp)/RAEM(t)

ACCESSION NR: AP4048374 S/0041/64/016/003/0406/0408

AUTHOR: Remez, Ye. Ya. (Kiev)

TITLE: Chebyshev's "trigometric" polynomials are also hyperbolic B

SOURCE: Ukrainskiy matematicheskiy zhurnal, v. 16, no. 3, 1964, 406-408

TOPIC TAGS: Chebyshev polynomial, polynomial, trigonometric function, hyperbolic function

Abstract: This note presents a new approach to the definition of the trigonometric Chebyshev polynomials $T_n(x) = \cos n \arccos x$. It consists, essentially, of an analytic continuation on the entire complex plane of a function, directly defined on the corresponding portion of the real axis.

ASSOCIATION: none

SUBMITTED: 17Apr63 ENCL: 00 SUB CODE: MA

NO REF SOV: 005 OTHER: 000 JPRS

Card 1/1

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya. (Kiyev)

Construction of Chebyshev approximations of the rational-fractional and certain related types. Ukr. mat. zhur. 15 no.4:400-411 '63. (MIRA 17:4)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya. [Remez, IE.IA.]

Set of optimal solutions to the problem of linear programming. Dop. AN URSR no.3:291-293 '64. (MIRA 17:5)

1. Institut matematiki AN UkrSSR. Chlen-korrespondent AN UkrSSR.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ACCESSION NR: AP4020370 S/0021/64/000/003/0291/0293

AUTHOR: Remez, Ye. Ya. (Corresponding member)

TITLE: On the set of optimal solutions of the problem of linear programming

SOURCE: AN UkrRSR. Dopovidi, no. 3, 1964, 291-293

TOPIC TAGS: linear programming, linear equality, linear inequality, maximizing, minimizing, convex polyhedron

ABSTRACT: The present article describes a simple method of obtaining by a finite number of operations an explicit representation of the set of all solutions of the linear programming problem, with incidental establishment in explicit form of the necessary and sufficient condition of their existence. Orig. art. has: 7 formulas.

ASSOCIATION: Insty*tut matematy*ky* AN UkrSSR (Institute of Mathematics, AN UkrSSR)

Card 1/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.; GAVRILYUK, V.T.

Some remarks on rational-polynomial Chebyshev approximations of functions as compared to segments of factorizations of Chebyshev polynomials. Ukr. mat. zhur. 15 no.1:46-57 '63. (MIRA 16:3)
(Chebyshev polynomials)
(Functions, Transcendental)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/041/63/015/001/003/009
B187/B102

AUTHORS: Remez, Ye. Ya, and Gavrilyuk, V. T. (Kiyev)

TITLE: Some remarks on rationally polynomial Chebyshev approximations of functions and comparison with partial-sum sections of the expansion of these functions in Chebyshev polynomials

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, v. 15, no. 1, 1963, 46-57

TEXT: Let $f(x)$ $(f \in C \equiv C(-1,+1))$ be a function continuous over the interval $[-1,+1]$; $\Pi_n(x)$ is assumed to be the polynomial of the least deviation for f and $\max_{-1 \leq x \leq +1} |f(x) - \Pi_n(x)| = E_n[f]$. Furthermore, $S_n(x)$ is assumed to be the n-th partial sum of the formal expansion of f in Chebyshev polynomials $T_\nu$ : $S_n(x) = \sum_{\nu=0}^{n} A_\nu T_\nu(x)$ and $\max_{-1 \leq x \leq +1} |f(x)-S_n(x)| = I_n[f]$. An attempt is made to explain the reciprocal relation between the two approximation forms on the basis of a survey of results obtained earlier by other authors. It is pointed out, in particular, that for the class

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$C_M^{(n+1)}$ of the functions for which $|f^{(n+1)}(x)| < M$ the exact upper bound (Bernstein) is: $\Delta_M^n = \sup_{f \in C_M^{(n+1)}} E_n f = \frac{M}{2^n (n+1)!}$. If, in addition, a lower bound is given $0 \leq N \leq |f^{(n+1)}|$ then the following estimations are valid:

$$\frac{N}{2^n (n+1)!} \leq E_n[f] \leq \frac{M}{2^n (n+1)!} \quad (7'), \qquad \frac{N}{2^n (n+1)!} \leq I_n[f] \leq \sigma_n \frac{M}{2^n (n+1)!} \quad (5').$$

According to Steklov $\sigma_n = 1 + \frac{2}{\pi} \frac{(2n)!!}{(2n+1)!!} < 1 + 0{,}47 \sqrt{\frac{3}{2n+1}}$ (6).

In the known estimation $1 \leq \frac{I_n[f]}{E_n[f]} \leq 1 + \Lambda_n$ (11) the value for $x = 0$ for the Lebesgue functions $\Delta_n$ can be represented, according to A. Berger (Nova Acta Soc. scient. Upsaliensis, 15, 1895, 1 - 33) in finite form:

$$\Lambda_n = \frac{1}{2n+1} + \frac{2}{\pi} \sum_{\nu=1}^{n} \frac{1}{\nu} \operatorname{tg} \frac{\nu\pi}{2n+1}. \quad (13)$$



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At the Institut matematiki AN USSR (Mathematics Institute of AS UkrSSR) the values $\Delta_n$ have been calculated up to n = 20 to exactly 7 places and compiled in a table. $I_n \sim E_n$ holds for functions where the quotient of neighboring, non-zero coefficients $A_{\nu_s}$ of the expansion in $T_\nu(x)$ tends to zero with increasing $\nu_s$. When concrete calculation processes are programmed it is convenient, in many cases, to replace certain functions by finite polynomials of smallest deviation (standard sub-programs). For calculating the coefficients of the polynomials $\pi_n$ approaching $\Pi_n$, a polynomial algorithm developed by Ye. Ya. Remez and a method of G. Hornecker (Comptes Rendus, Paris, 246, 1958, 43 - 46) are recommended. Approximation polynomials of least deviation calculated by this method are given for: $\sin\frac{\pi}{2}x \approx \pi_4(x)$, $\cos\frac{\pi}{4}x \approx \pi_8(x)$, $\sin\frac{\pi}{4}x \approx \pi_9(x)$, $\ln\frac{1+az}{1-az} \approx \pi_7(x)$ with $a = 3 - 2\sqrt{2}$, $x\cdot\mathrm{ctg}\,\frac{\pi}{4}x \approx \pi_{10}(x)$, The coefficients of these are exactly calculated to 18 places with the corresponding numerical values for characterizing the corresponding soundness of the



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Some remarks on rationally ...

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approximation. There is 1 table.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.; SHTEYNBERG, A.S.

Some extremum problems of the generalized Chebyshev type and the steepest descent method. Dok. AN URSR no.8:983-989 '61. (MIRA 14:9)

1. Institut matematiki AN USSR i Kiyevskiy politekhnicheskiy institut. 2. Chlen-korrespondent AN USSR (for Remez).
(Maxima and Minima)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya. (Kiyev)

Closest analogies of the second polynomial algorithm applied to discrete problems of Chebyshev's ordinary or generalized minimax containing linear parameters. Ukr.mat.zhur. 14 no.1:40-56 '62. (MIRA 15:3)

(Linear programming) (Game theory)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.; GAVRILYUK, V.T.

Elaboration of certain calculation procedures toward approximate solutions of Chebyshev problems with parameters entering non-linearly. Part 3. Ukr.mat.zhur. 13 no.2:150-172 '61. (MIRA 14:8)

(Aggregates)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

OSTROGRADSKIY, Mikhail Vasil'yevich [deceased]; SHTOKALO, I.Z., akademik, otv.red.; GNEDENKO, B.V., akademik, otv.red.toma; ISHLINSKIY, A.Yu., akademik, zamestitel' otv.red.; BOGOLYUBOV, N.N., akademik, red.; REMEZ, Ye.Ya., otv.red.toma; SAVIN, G.N., akademik, red.; SOKOLOV, Yu.D., red.; SMIRNOV, V.I., akademik, red.; YUSHKEVICH, A.P., prof., red.; POGREBYSSKIY, I.B., dotsent, red.; SHTELIK, V.G., red.izd-va; RAKHLINA, N.P., tekhn.red.

[Complete collection of works in three volumes] Polnoe sobranie trudov v trekh tomakh. Kiev, Izd-vo Akad.nauk USSR. Vol.3. 1961. 395 p. (MIRA 15:2)

1. AN USSR (for Shtokalo, Gnedenko, Savin). 2. Chleny-korrespondenty AN USSR (for Remez, Sokolov).
(Mathematics)
(Ostrogradskii, Mikhail Vasil'evich, 1801-1861)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

BOGOLYUBOV, N.N., red.; GNEDENKO, B.V., red.; POGREBYSSKIY, I.B., red.; REMEZ, Ye.Ya., red.; SMIRNOV, V.I., red.; SOKOLOV, Yu.D., red.; SHTOKALO, I.Z., red.; YUSHKEVICH, A.P., red.; SHIROKOVA, S.A., red.; YERMAKOVA, Ye.A., tekhn. red.

[Pedagogical heritage and documents on the life and work of Mikhail Vasil'evich Ostrogradskii (1.1.1862 - 1.1.1962)]Mikhail Vasil'evich Ostrogradskii, 1 ianvaria 1862 - 1 ianvaria 1962; pedagogicheskoe nasledie, dokumenty o zhizni i deiatel'nosti. Pod red.I.B.Pogrebysskogo i A.P.IUshkevicha. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1961. 397 p. (MIRA 15:1)

1. Akademiya nauk SSSR. Institut matematiki.
(Ostrogradskii, Mikhail Vasil'evich, 1801-1861)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

OSTROGRADSKIY, Mikhail Vasil'yevich, matematik, mekhanik; SHTOKALO, I.Z., akademik, otv. red.; GNEDENKO, B.V., akademik, zam. otv. red.; ISHLINSKIY, A.Yu., akademik, zam. otv. red.; BOGOLYUBOV, N.N., akademik, red.; REMEZ, Ye.Ya., red.; SAVIN, G.N., akademik, red.; SOKOLOV, Yu.D., red.; SMIRNOV, V.I., akademik, red.; YUSHKEVICH, A.P., prof., red.; POGREBYSSKIY, I.B., dotsent, red.; SHTELIK, V.G., red. izd-va; RAKHLINA, N.P., tekhn. red.

[Complete works in three volumes] Polnoe sobranie trudov v trekh tomakh. Kiev, Izd-vo Akad. nauk USSR. Vol.2. 1961. 358 p. (MIRA 14:11)

1. AN USSR (for Shtokalo, Gnedenko, Ishlinskiy). 2. Chlen-korrespondent AN USSR (for Remez, Sokolov).
(Mechanics, Analytic)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

28706
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D210/D303

16.5200

AUTHORS: Remez, Ye. Ya., Corresponding Member, AS UkrSSR, and Shteynberg, A.S.

TITLE: On some extremum problems of the generalized Chebyshev type and on the method of equalizing descents

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 8, 1961, 983-989

TEXT: Initially, problems of the type

$$\sup_{z \in E} \left| F_n(z;x) - f(z) \right| = \sup_{z \in E} \left| \sum_{j=1}^{n} x_j g_j(z) \right| = \text{funct.}(x) = \min \qquad (1)$$

with restrictive conditions

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D210/D303

On some extremum problems ...

$$X_v(x) \equiv \omega_v(x) + l_v \equiv \sum_{j=1}^{n} k_{vj} x_j + l_v \leqslant 0 \quad (v=\overline{1,m};\ \sum_{j=1}^{n} |k_{vj}| > 0) \qquad (2)$$

(called conditional minimax problems) are considered. As in the case of free minimax problems, without the restrictive conditions, this problem is reduced, with any degree of accuracy, to a similar one

$$\max_{z \in eH} \left| \sum_{j=1}^{n} x_j g_j(z) - f(z) \right| = \max_{i=\overline{1,H}} \left| \sum_{j=1}^{n} x_j g_j(z_i) - f(z_i) \right| = \min \qquad (1')$$

with the same conditions as in (2), on some corresponding finite

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set (called a network). The method of equalizing descents is suitable here for numerical construction of solutions. The treatment of this method remains essentially the same if (1') is replaced by a more general quasi-Chebyshev problem of algebraical minimax

$$\max_{i=\overline{1,N}} \Phi_i(x) = L(x) = \min, \qquad \Phi_i(x) \equiv \varphi_i(x) + b_i \equiv \sum_{j=1}^{n} o_{ij} x_j + b_i \tag{5}$$

If conditions (2) are added one obtains the more general problem of conditional minimax. It is mentioned that problems of Kantorovich type have been treated with the aid of the gradient me-



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On some extremum problems ... S/021/61/000/008/001/011
D210/D303

thod by G. Sh. Rubinshteyn (Ref. 9: Usp. mat. nauk 10: 4,20 (1955).DAN SSSR 113,987 (1957)) and S.I. Zukhovitskiy (Ref. 10: DAN SSSR 133,20 (1960); the latter does not state that his method is equivalent to one found previously by A.S. Shteynberg (Ref. 6: DAN UrSR 167 (1951)). The algorithm for the solution of the problem (5)-(2) is described and a theorem is established that the process formulated is always finite, i.e. after a finite number of steps either a solution is obtained or a situation reached which means that there is no solution. There are 12 references: 11 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Instytut matematyky AN URSR (Institute of Mathematics, AS UKrSSR); Kyyivs'kyy politekhnichnyy instytut (Politechnic Institute of Kyyev)

SUBMITTED: March 11, 1961

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

22765
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B112/B202

11.4100 16.6500

AUTHORS: Remez, Ye. Ya., Gavrilyuk, V. T.

TITLE: Numerical elaboration of certain ansatzes for the approximate construction of solutions of Chebyshev problems in which parameters occur nonlinearly. II

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, v. 13, no. 1, 1961, 53-62

TEXT: The authors first study two approximate linearization methods in connection with a generalized Chebyshev interpolation method. In the following, they calculate one example by both methods. They consider a class of unidimensional Chebyshev problems which are nonlinear with respect to $z = (z_1, \ldots, z_n)$: $\max_{x \in [a,b]} |\psi(x,z) - f(x)| \equiv \max_{x \in [a,b]} |\Phi(x,z)|$ $= L \equiv L(z) = \min(=\varrho)^2$, where $\psi(x,z)$ is a function of the "interpolation class" - in the present paper referred to as "class $\underline{A}$". The property $\underline{A}$ characterizing class $\underline{A}$ is the following: the difference $\psi(x,z') - \psi(x,z'')$ must not change its sign for any set of points $\{x_\nu\}_0^n \subset [a,b]$ $(x_0 < x_1 < \ldots < x_n)$. This property is especially characteristic of the functions:

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

22765

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B112/B202

Numerical elaboration of...

$\psi(x,z) = R(x,z) \equiv \gamma(x) \dfrac{z_1 x^{p-1} + z_2 x^{p-2} + \ldots + z_p}{z_{p+1} x^q + z_{p+2} x^{q-1} + \ldots + z_{n+1}}$, $(p + q = n)$. The solution of the formulated interpolation problem is based mainly on the solution of the set of n+1 incompatible nonlinear equations $\Phi(x,z) = 0$. The authors, instead, solve the "quasicompatible" set: $\varepsilon(x_\nu, z) \equiv v_\nu \Phi(x_\nu, z) = \tilde{\varrho}$, $v_\nu = (-1)^\nu \operatorname{sgn}\Phi(x_0, z^*) = (-1)^\nu v_0^2$, $\min_\nu \{|\Phi(x_\nu, z^*)|\} < \tilde{\varrho} < \max_\nu \{|\Phi(x_\nu, z^*)|\}$. This quasicompatible set is approximately linearized by a "symmetrical" and an "asymmetrical" method. The asymmetrical method can be used only for the solution of n equations: $\varepsilon(x_{\nu_s}, z) = \tilde{\varrho}$ of the quasicompatible set. In this case $\delta_{\nu_0} = \varepsilon(x_{\nu_0}, z) - \tilde{\varrho}$ differs from zero, while the symmetrical method is used to determine all n+1 $\delta_\nu$ by the method of the least squares. The authors illustrate both methods by the example of a function: $\psi(x,z) = \dfrac{z_1 x^2 + z_2 x + z_3}{x^2 + z_4 x + z_5}$. There are 2 tables and 13 references:

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B112/B202

Numerical elaboration of...

9 Soviet-bloc and 4 non-Soviet-bloc

SUBMITTED: April 1, 1960

Card 3/3

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.; KOROMYSLICHENKO, V.D.

Markov problem for polynomials of a system of Chebyshev functions and the concept of a regular T-system. Dokl. AN SSSR 135 no.2:266-269 N '60. (MIRA 13:11)

1. Institut matematiki AN USSR. Predstavleno akademikom N.N. Bogolyubovym.

(Chebyshev polynomials)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.; KOROMYSLICHENKO, V.D.

Regular T-systems and some problems in the theory of Markov's generalized polynomials. Dokl. AN SSSR 135 no.4:787-790 '60. (MIRA 13:11)

1. Institut matematiki Akademii nauk USSR. Predstavleno akademikom N.N.Bogolyubovym.

(Polynomials)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya.; GAVRILYUK, V.T.

Elaboration of several calculating approaches to an approximate constitution of Chebyshev's problems with nonlinearly entering parameters. Part 1. [with summary in French]. Ukr. mat. zhur. 12 no.3:324-338 '60. (MIRA 13:11)

(Approximate computation)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

89013

S/020/60/135/004/006/037
C111/C222

16.3000

AUTHORS: Remez, Ye.Ya., and Koromyslichenko, V.D.

TITLE: Regular T-Systems and Some Problems in the Theory of V.A.Markov's Generalized Polynomials

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol.135, No.4, pp.787-790

TEXT: The authors consider everywhere regular Chebyshev-Markov systems (TM-systems), i.e. systems being so that the polynomials of the system $F(x) = \sum A_\nu \varphi_\nu(x) \not\equiv \text{const}$ on $[a,b]$ have at most n+1 points of maximal deviation (cf. (Ref.1,2,3)). Most of the results, however, can be extended to general regular T-systems.

At first the classical Markov problem is generalized: For the generalized polynomial $F(x) = \sum A_\nu \varphi_\nu(x)$ the problem

(1) $$\max_{a \leq x \leq b} |F(x)| = L[F] = L(A_0, \ldots, A_n) = \min \; (= \rho)$$

has always a unique or infinitely ambigous solutions under the condition

(2) $$\omega[F] = A_0\alpha_0 + A_1\alpha_1 + \ldots + A_n\alpha_n = 1 \quad (\sum |\alpha_\nu| > 0).$$

In order that the ("non-degenerated") polynomial $\tilde{F}(x) = \sum \tilde{A}_\nu \varphi_\nu(x) \not\equiv \text{const}$

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Regular T-Systems and Some Problems in the Theory of V.A.Markov's Generalized Polynomials

satisfying (2) and having the points of deviation $x_0,\dots,x_{\varkappa-1}$ $(1\leq\varkappa\leq n+1)$, is a solution of (1) it is necessary and sufficient that identically in $A_0,\dots,A_n$ the relation

$$\omega[F]\equiv\sum_{s=0}^{\varkappa-1} r_s F(x_s) \tag{3}$$

and the additional relation

$$r_s\tilde{F}(x_s)\geqslant 0 \quad (s=0,\dots,\varkappa-1) \tag{4}$$

are satisfied.
Conditions for the uniqueness of the solution of (1)-(2) in the case of T*-systems (cf.(Ref.2)) are discussed.
It is stated that an arbitrary given polynomial $F(x)=\sum A_\nu\varphi_\nu(x)$ $(\nu=0,\dots,n;\ a\leq x\leq b)$ is a solution of (1)-(2) for a suitably chosen $\alpha=\bar{\alpha}=(\bar{\alpha}_0,\dots,\bar{\alpha}_n)$. Here it can be reached that the Chebychev points of deviation form an arbitrarily prescribed non-empty subset $(s=s_i,\ i=1,\dots,q)$

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Regular T-Systems and Some Problems in the Theory of V.A.Markov's Generalized Polynomials

of the set $\{x_s\}_0^{\mu-1}$ of the points of deviation of the given $F(x)$.

The authors point to the connection with the correlative problem of generalized moments. This problem consists in the determination of a function of bounded variation $\sigma(x)$ satisfying the conditions

$$(9) \qquad \int_a^b \varphi_\nu(x)\,d\sigma(x) = \alpha_\nu \quad (\nu=0,\dots,n) \qquad V_a^b(\sigma) = \min.$$

Main result referring to this: If the problem (1)-(2) has at least one non-degenerated solution ($F^{(0)}(x) \not\equiv$ const) then the single solution of (9) is a step function $\sigma(x)$ with $q$ jumps $r_0,\dots,r_{q-1}$ in the Chebyshev points of deviation $x_0,\dots,x_{q-1}$ of (1)-(2), where

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

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Regular T-Systems and Some Problems in the Theory of V.A.Markov's Generalized Polynomials

(10) $$V_a^b(\sigma) = \int_a^b |d\sigma| = \sum_0^{q-1} |r_s| = \frac{1}{\varrho} .$$

The authors mention Ya.A.Shokhat and Vl.Markov. There are 12 references: 11 Soviet and 1 English.

[Abstracter's note: The understanding of the paper is very difficult since, without any hints or explanations, the authors use several notations of earlier papers (Ref.4,5) and of the book of Ye.Ya.Remez, General Numerical Methods of Chebyshev Approximations, 1957 (Ref.2) which is not available to the abstracter]

ASSOCIATION: Institut matematiki Akademii nauk USSR (Mathematical Institute of the Academy of Sciences Ukrainskaya SSR)

PRESENTED: June 6, 1960, by N.N.Bogolyubov, Academician

SUBMITTED: June 6, 1960

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014446

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

REMEZ, Ye.Ya. [Remez, IE.IA.]

Some means for effectively applying the principle of linearization to the construction of solutions of an important class of problems of nonlinear Chebyshev approximation. Dop.AN URSR no.3:272-278 '60. (MIRA 13:7)

1. Institut matematiki AN USSR. Chlen-korrespondent AN USSR.
(Approximate computation)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

84160

S/021/60/000/002/001/010
A158/A029

16.6500

AUTHOR: Remez, Ye.Ya., Corresponding Member, AS UkrSSR

TITLE: Problem of Constructing the Solutions of Chebyshev's Non-Linear Approximations and a Calculation Method of Approach Based on Certain Generalizations of Gauss' Linearization Procedure

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi Radyans'koyi Sotsialistychnoyi Respubliky, 1960, No. 2, pp. 139 - 143

TEXT: This is a further contribution to the author's works on subject matter (Refs. 1 and 2) developed upon having studied experimental data obtained in the Computation Laboratory of the Instytut matematyky AN UkrRSR (Institute of Mathematics of the AS UkrSSR). The author examines Chebyshev's problem in the form of

$$\max_{X \in E} | \Phi(X; z_1, \ldots, z_n) | = [\overline{L}(z_1, \ldots, z_n) \overline{=} \overline{L}(z) = \min (= \overline{\rho}), \quad (1)$$

where the abstract argument X of the function $\Phi$ (continued with respect to X) overruns a certain given compact E, and $z_1 \ldots, z_n$ denote true-number parameters (coordinates) of "n"-dimensional parameter $z \in R_n$, the area of whose change may be the whole Euclidean space $R_n$, or some general pointal multiple $G \subseteq R_n$. It is as-

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84160

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A153/A029

Problem of Constructing the Solutions of Chebyshev's Non-Linear Approximations and a Calculation Method of Approach Based on Certain Generalizations of Gauss' Linearization Procedure

sumed that some qualities of the differentiality of $\Phi(X; z)$ with respect to the z is present. One example is given and it is stated that the principle of linearization will be further amplified in a paper to come. The author gives a purely mathematical analysis of the process, without giving any definite formulas or conclusions, using it, so to say, as an in a good measure example classical for such problems. There are 11 references: 6 Soviet, 2 German, 2 English and 1 French.

ASSOCIATION: Instytut matematyky AN UkrRSR (Institute of Mathematics, AS UkrSSR)

SUBMITTED: October 3, 1959

Card 2/2

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REMEZ, Ye.Ya. [Remez, IE.IA]

Problem of constructing nonlinear Chebyshev approximations and a numerical approach based on some generalizations of Gauss' linearization procedure. Dop.AN URSR no.2:139-143 '60. (MIRA 13:6)

1. Institut matematiki AN USSR. Chlen-korrespindent AN USSR. (Approximate computations)

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16(1)

AUTHOR: Remez, Ye.Ya. SOV/41-10-4-7/11

TITLE: Some Questions on the Structure of the Formulas of Mechanic Quadratures Which can be Used for the Two-Sided Numerical Estimation of the Solutions of Differential Equations (Nekotoryye voprosy struktury formul mekhanicheskikh kvadratur, mogushchikh sluzhit' dlya dvustoronney chislennoy otsenki resheniy differentsial'nykh uravneniy)

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1958, Vol 10, Nr 4, pp 413-418 (USSR)

ABSTRACT: Let

$$\int_{x_r}^{x_n} f(x)dx = (x_n-x_r) \sum_{i=s}^{n} k_i f(x_i)+R, \quad r<n, \quad s<n, \quad R=cf^{(q)}(\xi).$$

If $x_0<x_1<x_2<\ldots$, then $k_n>0$ if $c<0$, and $k_n\leq 0$ if $c>0$. But if $x_0>x_1>x_2>\ldots$, then $k_n>0$ if $c>0$ and q is even or if $c<0$ and q is odd; reversely it is $k_n\leq 0$ if $c>0$ and q is odd or if $c<0$ and q is even.

These properties are proved in two theorems because they are

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Some Questions on the Structure of the Formulas of Mechanic Quadratures Which can be Used for the Two-Sided Numerical Estimation of the Solutions of Differential Equations SOV/41-10-4-7/11

necessary for the application of a recurrence process considered by the author [Ref 1] some times ago, in which for the numerical integration of $\frac{dy}{dx} = f(x,y)$, $y = y_o$ for $x = x_o$ the value $y(x_n)$ is estimated from above and from below by the estimations of the values $y(x_i)$ determined before.

There are 8 references, 5 of which are Soviet, 1 English, 1 French, and 1 Swedish

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SOV/41-10-2-6/13

AUTHOR: Remez, Ye.Ya. (Kiyev)

TITLE: On the Problem of the Algebraic Minimax of a Finite System of Linear Functions (O zadache algebraicheskogo minimaksa konechnoy sistemy lineynykh funktsiy)

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1958, Vol 10, Nr 2, pp 178-192 (USSR)

ABSTRACT: The author investigates the following quasi - Chebyshev problem: The point $x = (x_1, \ldots, x_n)$ is to be determined so that

$$(1) \qquad \max_{1 \leqslant i \leqslant N} \phi_i(x) = \max_{1 \leqslant i \leqslant N} \left( \sum_{j=1}^{n} a_{ij} x_j + b_i \right) = L(x) \quad , \quad N > n$$

has a minimum. For the existence of at least one solution it is necessary and sufficient that for all values $x = (x_1, \ldots, x_n)$ it holds

$$(2) \qquad L(x) > g \quad , \quad g = \text{const} .$$

Then the solution consists either of one point or of a convex set of points. The efforts to determine in advance whether (2) is satisfied or not, form the main part of the paper. The

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On the Problem of the Algebraic Minimax of a Finite System of Linear Functions SOV/41-10-2-6/13

author applies combined algebraic and geometric methods and starts from generalizations of older Russian results. The circumstantiality of the text, again and again interrupted by digressive considerations, renders difficult the understanding. An oral information on the results was given at the third Mathematical Union Congress in Moscow (June 26, 1956), There are 11 references, 10 of which are Soviet, and 1 American.

SUBMITTED: December 1 , 1957

1. Linear equations 2. Functions 3. Algebra

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REMEZ, Ye.Ya.

Problem on the algebraic minimax of a finite system of linear equations. Part 2 [with summary in French]. Ukr. mat. zhur. 10 no.3:289-298 '58. (MIRA 11:11)
(Functions of several variables)

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REMEZ, Ye.Ya.

Problem on the algebraic minimax of a finite system of linear functions. Part 1 [with summary in French]. Ukr. mat. zhur. 10 no.2:178-192 '58. (MIRA 11:6)
(Functions of several variables)

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REMEZ, Ye. Ya.

Call Nr: QA 221.R4

AUTHOR: Remez, Ye.Ya.

TITLE: General Computing Methods of Chebyshev Approximation (Obshchiye vychislitel'nyye metody Chebyshevskogo priblizheniya); Problems with Linearly Entering Real Parameters (Zadachi s lineyno vkhodyashchimi veshchestvennymi parametrami)

PUB. DATA: Izdatel'stvo Akademii nauk Ukrainskoy SSR, Kiyev, 1957, 454 pp., 3000 copies

ORIG. AGENCY: Akademiya nauk Ukrainskoy SSR

EDITORS: Responsible Ed.: Gnedenko, B.V., Member, Academy of Sciences, Ukrainian SSR; Ed. of the Publ. House: Polonskiy, I.L.; Tech. Ed.: Krylovskaya, N.S.; Reviewers: Dvorkina, V.S. and Popova, N.A.

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General Computing Methods of Chebyshev Approximation (Cont.)

PURPOSE: The book is intended for scientific workers in the field of mathematics and its applications, and for the engineering staff of scientific institutions and laboratories.

COVERAGE: This monograph is devoted to the task of working out a series of algorithms and general methods for the purpose of solving problems of a new type, such as the problems of the numerical construction of Chebyshev approximations. The book has 128 references, 65 of which are USSR, 31 French, 14 German, 6 English, 8 Ukrainian, 3 Italian, and 1 Polish. The personalities mentioned are: Bernshteyn, S.N.; Bruyevich, N.G.; Popov, A.S.; Grave, D.A.; Zolotarev, Ye.I.; Achiyezer, N.I.; Geromimus, Ya.L.; Nikol'skiy, S.M; Remez, Ye.Ya.; Goncharov, V.L.; Natanson, I.P.; Chebotarev, N.G.; Raykov, D.A.; Lemberskiy, M.F.; Novodvorskiy, Ye.P.; Pinsker, I.Sh.; Voronoy, G.F.; Shnirel'man, L.G.; Kolmogorov, A.N.; Gel'fond, I.M.; Gantmakher, F.R.;

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