"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SCHLUPEK, A.; SALEK, J.; TICHY, St.

Malignant cylindroma of the trachea. Rozhl. chir. 40 no.7:489-492 Jl '61.

1. II patologicko-anatomicky ustav University Karlovy v Praze, prednosta prof. MUDr. V. Jedlicka.

(TRACHEA neoplasms) (CYLINDROMA case reports)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, J.

Postoperative pericardiac hernia. Rozhl. chir. 41 no.5:357-362 My '62.

1. Laborator pro chirurgickou patologii a fyziologii CSAV v Praze, vedouci prof. dr B. Spacek II. chirurgicka klinika University Karlovy v Praze, prednosta prof. dr. J.Lhotka.
(PNEUMONECTOMY compl) (HEART DISEASE etiol)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

Z/032/63/013/004/003/011
E073/E183

AUTHORS: Šálek J., Engineer, and Gazda J., Engineer

TITLE: Use of sintered carbides for difficult machining conditions

PERIODICAL: Strojírenství, v.13, no.4, 1963, 297-301

TEXT: The most common causes of excessive wear of cutting tools are incorrect selection of cutting-tool material, cutting-tool geometry and cutting conditions. Owing to the increasing tendency to use sintered-carbide tools for machining operations, for which hitherto tougher high-speed tools were used, the authors review published information on the properties of six types of recently-developed Soviet sintered carbides. Two of these are suitable for machining oxidation-resistant materials, Ti alloys, and hardened cast iron, while the others are suitable for intermittent cutting of austenitic steels and steel castings. Machining tests have been carried out with the Czech-produced sintered carbides S4 and S5; these consisted of intermittent cuts on castings of a heat-treated cast steel of 75 to 85 kg/mm^2 tensile strength, 36 kg/mm^2 yield point (0.42% C, 0.71% Mn, 0.22% Si).

Card 1/2

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

Use of sintered carbides for ... Z/032/63/013/004/003/011
E073/E183

The method proposed by Professor Křístek (Strojírenství, v.12, no.1, 44-48) was used for the tests; it is suitable both for measuring the width of the wear trace and for assessing the state of the cutting edge and the tool in general. The service life can be considerably influenced by hand-honing (with a negative angle $\gamma \sim 30^{\circ}$). The cutting edge did not chip except for one isolated case. The wear rates obtained for carbides S4 and S5 were very low, particularly for the carbide S4. To obtain full benefit from the properties of these carbides they should be used only for relatively high rates of feed and low cutting speeds similar to those used in the experiments carried out under the following conditions: v = 31 m/min, s = 0.43 to 0.80 mm/rev, t = 1.5 mm. There are 12 figures and 1 table.

ASSOCIATION: Vysoká škola strojní a textilní, Liberec (Technical University on Mechanical Engineering and Textiles, Liberec)

Card 2/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, J., inz.

"Machining of difficult workable materials" by M. Mikovec and others. Reviewed by J. Salek. Strojirenstvi 13 no.8:637-638 Ag '63.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, Jan, Inz.

"Supersonic cutting" by L.D.Rozenberg and others. Reviewed by Jan Salek. Stroj vyr 11 no.9:475 S '63.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, Jan, inz.

"Cutting tools for making instruments" by I.A. Sokolovskij [Sokolovskiy, I.A.]. Reviewed by Jan Salek. Stroj vyr 12 no.3:233 '64.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

Z/0032/64/014/003/0181/0185

ACCESSION NR: AP4020555

AUTHOR: Salek, J. (Engineer)

TITLE: Ultra High Speed Machining

SOURCE: Strojirenstvi, v. 14, no. 3, 1964, 181-185

TOPIC TAGS: ultra high speed machining, carbide cutting materials, sintered carbide, machining temperatures, plastic deformation, machining tool

ABSTRACT: Ultra high speed machining uses short-term plastic deformation of metals. In this way materials hard to machine otherwise can be worked with. The machined surfaces generally exhibit a good appearance. The output is much higher in high-speed machining than with ordinary speeds. Unsolved problems of ultra high speed machining are: vibrations, magnitude of the original impact, accuracy of machining. Sintered carbides are the best cutting material, but sufficient information on these materials is not yet available. Ultra high speed machining cannot as yet be used for large items, or items of a complicated shape. The present-day machining velocities are between 7000 and 8000 m/min, and the

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

ACCESSION NR: AP4020555

power required varies between 2000 and 10,000 kW. The article is based on first-hand experience in the USA, Russia, and Germany. Orig. art. has: 14 figures, 2 tables.

ASSOCIATION: Liberec Vysoka Skola Strojni a Textilni (College of General and Textile Machinery)

SUBMITTED: 00 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: MD, MA NO REF SOV: 002 OTHER: 009

Card 2/2

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, J. inz.

New steels with improved machinability. Strojirenstvi 14 no.7: 523 Jl '64.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

L 31210-66 T/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/DJ

ACC NR: AP6022601 SOURCE CODE: CZ/0032/65/015/012/0908/0913

60
B

AUTHOR: Salek, J. (Engineer; Candidate of sciences)

ORG: Technical Institute of Machine Building and Textiles, Liberec (Vysoka skola strojni a textilni)

TITLE: Physical nature of the wear of hard-alloy tools used for machining carbon steel

SOURCE: Strojirenstvi, v. 15, no. 12, 1965, 908-913

TOPIC TAGS: machine tool, carbon steel, high temperature effect, austenite transformation, wear resistance, hardness, alloy, metal grain structure, metal machining

ABSTRACT: Under certain conditions the structure of the boundary layer of chips removed with hard alloy tools during the machining of carbon steel differs from the structure of the basic material. From changes taking place in the chips the author concludes that, owing to high temperature in the boundary layer, some part of the metal is transformed into the austenite phase, and this in turn determines the wearing rate of the tool. This theory is confirmed by the fact that the structure and microhardness of swarf from grinding are identical with the structure and microhardness of the boundary layer of chips. This paper was presented by Engineer J. Houdek. Orig. art. has: 16 figures and 2 tables. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 11, 13 / SUBM DATE: none / ORIG REF: 005 / SOV REF: 002

OTH REF: 017

Card 1/1 BLG UDC: 669.14.018.252.2: 621.9.025.002.3: 669.018 0620

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, Jan

"Precision of machining" by V.S. Korsakov. Reviewed by Jan Salek. Stroj vyr 10 no.10:534 O '62.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

KRISTEK, F., prof., inz.; SALEK, J., inz.

Continuous control of the wear of lathes. Strojirenstvi 12 no.1: 44-48 Ja '62.

1. Vysoka skola strojni a textilni, Liberec.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

Salek, M.

"Highly efficient machine vise." p.107

TECHNICKA PRACA. (Rada vedeckych technickych spolocnosti pri Slovenskej akademii vied) Bratislava, Czechoslovakia, Vol. 7, no. 3, 1955.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 9, Sept. 1959

Uncl.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, M.; LOMSKY, J.; PRENOSIL, J.

Contribution to the problem of postoperative duodenal fistulae. Rozhl. chir. 44 no.12:811-816 D '65.

1. Chirurgicke oddeleni Ustavu narodniho zdravi v Ceskem Brode (vedouci MUDr. M. Salek), Chirurgicka zakladna UDL v praze (prednosta prof. dr. J. Knobloch, DrSc.), Onkologicky ustav v Praze 8 a radiologicka katedra UDl v Praze (reditel ustavu a vedouci katedry MUDr. F. Vadura).

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, M.; LOMSKY, J.

Contribution to rare complications of cholelithiasis. Rozhl.chir. 39 no.6:418-423 Je '60.

1. Chirurgicke odd. OUNZ Cesky Brod, prednosta dr. Jan Lomsky.
(CHOLELITHIASIS compl)
(BILIARY FISTULA etiol)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, Milos, Dr.

RUSNAK, Alois, Dr.; SALEK, Milos, Dr.

Tietze syndrome. Rozhl. chir. 37 no.2:149-154 Feb 58.
(RIBS, dis.
Tietze synd., case reports (Cz))

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

LOMSKY, J.; SALEK, M.; DOHNAL, J.

Considerations on the treatment of Colles' fracture. Acta chir. orthop. trauma. Cech. 28 no.1:49-52 F '61.

1. Chirurgicke oddeleni OUNZ Cesky Brod, prednosta J. Lomsky.

(RADIUS fract & disloc)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

LOMSKY, J.; SALEK, M.; HLASIVEC, Zd.; PRENOSIL, J.

Contribution to the treatment of carcinoma of the head of the pancreas. Rozhl. chir. 41 no.12:796-801 D '62.

1. Chirurgicke oddeleni UNZ v Ceskem Brode, prednosta MUDr. J. Lomsky Onkologicky ustav v Praze 8 a radiologicka katedra Ustavu pro doskolovani lekaru v Praze, reditel ustavu a prednosta katedry MUDr. F. Vadura.
(PANCREATIC NEOPLASMS) (GOLD COLLOID RADIOACTIVE)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

42533

Z/014/62/000/011/001/002
E192/E382

9.2/20

AUTHORS: Faktor, Zdeněk, Engineer and Šálek, Viktor

TITLE: Ferrite E cores

PERIODICAL: Sdělovací technika, no. 11, 1962, 402 - 408

TEXT: Five different types of E cores made of ferrites, type H 10, are manufactured by the Šumperk Works in Czechoslovakia. Two such cores are usually used for winding a coil. The shape of a core is illustrated in Fig. 16 and the dimensions are as follows: A 20 to 55 mm; L 8.6 to 27.8 mm; S 5 to 22 mm; B 15 to 37.5 mm; C 5 to 17 mm; L_1 5.7 to 19 mm and r 2 to 2.5 mm. The most important parameter of a core is its $\mu H/turn^2$ constant and this ranges from 0.35 to 4.2 for two E cores joined together. The cores can be used at frequencies up to 100 kc/s, where their loss angle tan δ is less than 0.1. To wind a coil two E cores are placed together and joined by a suitable insulating varnish or upon (an epoxy resin); this should be placed around the perimeter of the three "vertical" members of the individual cores. The $\mu H/turn^2$ constant is normally measured at 50 c.p.s. at a field strength of 5 mOe. This constant

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is also measured for pulse operation by using the comparison method, illustrated in Fig. 15. In this, L_n is a linear inductance of about 2 mH wound on a double E core with an air gap of 2 mm; L_x is the inductance of a coil having a known number of pulses, wound on the core to be measured. R_2 and R_3 are small resistances, while R_1 is the internal resistance of the generator. The deflection of the meter is adjusted by the potentiometer so that it is identical for both positions of the switch P. The unknown inductance is:

$$L_x = kL_n \qquad (12)$$

where $k = J_1/J_2$ where J_1 and J_2 are the amplitude of the magnetization currents in L_n and L_x. The cores can be used at frequencies up to 5 Mc/s but their tan δ might increase appreciably. There are 16 figures. and 2 tables.

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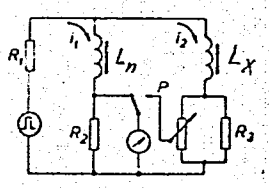
Ferrite E cores

Fig. 15:



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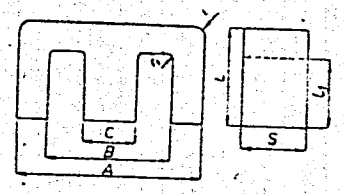
E192/E382

Fig. 16:



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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEK, Zdenek

Use of models in designing industrial enterprises. Prum potravin 13 no.12:644-646 D '62.

1. Statni ustav pro projektovani zavodu chemickeho prumyslu, Chemoprojekt, Praha.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

L 3108-66 EWT(d)/EWT(m)/EWP(i)/EWP(c)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)
ACCESSION NR: AP5026358 JD UR/0105/64/000/009/0094/0095

AUTHOR: Tsvetkov, V. A.; Birzniyek, L. V.; Vysochanskiy, V. S.; Shakhnazaryan, Yu. M.; Kazanskiy, V. Ye.; Kapuntsov, Yu. D.; Salekh, M. A. Kh.; Frumkin, A. L.; Bakhovtsov, B. A.

TITLE: Dissertations in competition for the academic degree of doctor of technical sciences

SOURCE: Elektrichestvo, no. 9, 1964, 94-95

TOPIC TAGS: electric engineering, electric power engineering, electric equipment, electric distribution equipment, electric rotating equipment, automatic control, automatic control system

Abstract: The following defended dissertations at the Moscow Power Engineering Institute: V. A. TSVETKOV, 14 December 1962, on the theme "Autoparamagnetic Phenomena and Surges in Three-Phase Circuits which Contain Ferromagnetic Equipment," his official opponents -- Doctor of Technical Sciences, Professor V. A. TAFT and Candidate of Technical Sciences, Lecturer L. F. DMOKHOVSKAYA; L. V. BIRZNIYEK, 4 January 1963, on the theme "Electromagnetic Processes in Multistage Voltage Regulation Circuits in Electric

Card 1/4 *[NOT AUTHOR'S IN ARTICLE]

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L 3108-66
ACCESSION NR: AP5026358

9

Rolling Stock with Semiconductor Rectifiers," his official opponents -- Doctor of Technical Sciences B. N. TIKHMENEV and Candidate of Technical Sciences, Lecturer L. M. TRAYHTMAN; V. S. VYSOCHANSKIY, 18 January 1963 on the theme "Methods for Controlling the Strip Tension at the Reel of a Cold Rolling Mills," his official opponents -- Doctors of Technical Sciences N. P. KUNITSKIY and N. N. DRUZHININ; Yu. M. SHAKHNAZARYAN, 18 January 1963, on the theme "Approximate Methods for Analysis of Non-Stationary Asynchronous Conditions in Electrical Systems," his official opponents -- Doctor of Technical Sciences, Professor L. G. MAMIKONYANTS and Candidate of Technical Sciences, Lecturer N. I. SOKOLOV; V. Ye. KAZANSKIY, 18 January, on the theme "Some Problems in Automation and Remote Control of Power Systems," his official opponents -- Doctor of Technical Sciences, Professor I. A. SYROMYATNIKOV and Candidate of Technical Sciences V. K. SPIRIDONOV; Yu. D. KAPUNTSOV, 18 January 1963, on the theme "An Asynchronous Electric Drive with Non-Symmetric Connection of the Saturation Chokes in the Stator Circuit," his official opponents -- Doctor of Technical Sciences V. Ye. BOGOLYUBOV and Candidate of Technical Sciences, Lecturer D. N. LIPATOV; M. A. Kh. SALEKH, 22 February 1963, on the theme "Theoretical Study of the Operation of Minature Two-Phase Asynchronous Machines when the Supply Voltage is not Sinusoidal," his official opponents -- Doctor of Technical Sciences, Professor A. I. BERTINOV and Candidate of Technical Sciences,

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

L 3108-66

ACCESSION NR: AP5026358

10

Lecturer P. Yu. KAASIK; A. L. FRUHKIN, 8 March 1963, on the theme "A Theoretical and Experimental Study of the Permeability of Anisotropic Thin Magnetic Films," his official opponents -- Doctor of Physical and Mathematical Sciences, Professor R. V. TELESNIN and Candidate of Technical Sciences, Lecturer P. P. MESYATSEV; B. A. BAKHOVTSOV, 19 April 1963, on the theme "Synthesis of Systems for Automatic Control of Starting and Stopping of Electric Drives," his official opponents -- Doctor of Technical Sciences, Professor A. S. SANDLER and Candidate of Technical Sciences, Lecturer Yu. Ye. NITUSOV. At the Moscow Higher Technical Academy imeni Bauman -- O. A. MIRONOV, 10 December 1962, on the theme "A Method for Experimental Programming of Electronic Digital Computers," his official opponents -- Doctor of Physical and Mathematical Sciences, Professor L. A. LYUSTERNIK and Candidate of Technical Sciences, V. Ya. PETROV. At the All-Union Electrotechnical Institute im. Lenin -- V. A. VOL'KENAU, 11 December 1962, on the theme "Conductivity of Carborundum," his official opponents -- Doctor of Technical Sciences, Professor V. V. BURGSDORF and Candidate of Technical Sciences, D. V. SHISHMAN. At the Academy of Municipal Economy im. Pamfilov -- V. A. KOZLOV, 14 January 1963, on the theme "Problems in the Use of Closed Systems for Municipal Electrical Networks," his official opponents -- Professor P. G. GRUDINSKIY and Candidate of Technical Sciences, Lecturer F. F. VOROBTSOV.

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

L 3108-66

ACCESSION NR: AP5026358

At the All-Union Scientific Research Institute of Electromechanics -- L. Ya. STANISLAVSKIY, 23 November 1962, on the theme "On Work in the Field of High Power Turbogenerators and Hydrogenerators," his official opponents -- Doctor of Technical Sciences, Professor I. M. POSTNIKOV, Doctor of Technical Sciences I. D. UMUBOV and Candidate of Technical Sciences Yu. M. EL'KIND.

Research Institute of Railroad Transportation: V. D. TULUPOV, 21 December 1962, on the theme "Development and Investigation of a System for Automatic Control of Rheostat Braking of Rectifier Electric Locomotives," his official opponents -- Doctor of Technical Sciences B. N. TIKHMENEV and Candidate of Technical Sciences B. G. KAMENETSKIY; V. D. MONTSEV, 21 December 1962, on the theme "Protection of Traction Motors from Short Circuit Currents During Regenerative Braking," his official opponents -- Doctor of Technical Sciences, Professor V. Ye. ROZENFEL'D and Candidate of Technical Sciences L. M. TRAKHTMAN; A. V. KAMENEV, 11 January 1963, on the theme "Study of Voltage Control Systems for Power Transformers in AC Electric Locomotives with Rectifiers," his official opponents -- Doctor of Technical Sciences, I. P. ISAYEV and Engineer Kh. Ya. BYSTRITSKIY.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: EE, IE

NO REF SOV: 000 OTHER: 000 JPRS

Card 4/4

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

L 28904-66 EWT(1)

ACC NR: AP6019170 SOURCE CODE: UR/0144/65/000/011/1211/1221

39
B

AUTHOR: Salekh, M. A. Kh. (Candidate of technical sciences); Yuferov, F. M. (Candidate of technical sciences, Docent)

ORG: [Salekh] Moscow Order of Lenin Power Engineering Institute (Moskovskiy Ordena Lenina energeticheskiy institut); [Yuferov] Department of Electrical Machines, Moscow Order of Lenin Power Engineering Institute (Kafedra elektricheskiye Mashin Moskovskogo Ordena Lenina energeticheskogo instituta)

TITLE: Methods for the calculation of characteristics of two-phase asynchronous micromotors driven by nonsinusoidal asymmetric voltages

SOURCE: IVUZ. Elektromekhanika, no. 11, 1965, 1211-1221

TOPIC TAGS: electric motor, miniature electric equipment

ABSTRACT: The operating characteristics of asynchronous low-power motors driven by nonsinusoidal voltages depend to a considerable degree on the magnitude and order of the higher harmonics, the method of power supply, the method of control, and the various parameters (especially the active resistance of the rotor). The present paper investigates the influence of the departure from a pure sine form of the power supply voltage on the operation of two-phase asynchronous micromotors (designed for actuation or general purposes) accepting nonsinusoidal voltages across both windings, but containing no phase shifting elements. Following the general outline of the theory, the authors carry out the calculation of currents, the calculation of the mechanical properties of the above mentioned micromotors, and discuss the order of calculations using the auxiliary curves. Orig. art. has: 5 figures, 38 formulas, and 1 table. [JPRS]

SUB CODE: 09 / SUBM DATE: 01Nov63 / ORIG REF: 002

UDC: 621.313.1/3.+621.313.332

Card 1/1

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKH, M. Z. Kh.

"Theoretical Study of the Operation of Minature Two-Phase Asynchronous Machines when the Supply Voltage is not Sinusoidal."

Dissertation for the degree of Doctor of Technical Sciences defended at the Moscow Power Engineering Institute, February 1963.

Moscow, Elektrichestvo, No.9 Sept 64, pp 94-95.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

S/194/62/000/003/017/066
D230/D301

AUTHORS: Tagiev, Z. B. and Salekhli, T. M.

TITLE: Electronic-relay adapter for increasing the recording time of seismic waves, working in conjunction with a directive controlled receiving apparatus РНП (RNP)

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 3, 1962, abstract 3-2-74s (Azerb. neft. tbsrrufaty, Azerb. neft. kh-vo, 1961, no. 7, 12-14)

TEXT: Describes an adapter for the standard apparatus RNP, designed at the AzNII DN Geophysical Laboratory. The adapter provides coordination between the time of explosion and time of rotation of a film drum used for transverse oscillographic recording; it switches on the galvanometer lights and facilitates the transfer, at a given moment, of output oscillations from the amplifiers of the seismic station to oscilloscope galvanometers. In addition, it provides a reference mark for the RNP time on the seismic film and on the seismogram; it is further possible to separate this time

Card 1/2

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

S/194/62/000/003/017/066
D230/D301

Electronic-relay adapter ...

from the start of oscillation recording on the film at an arbitrary interval of 0.2 to 0.3 sec. The depth of the investigation of the geological section is increased by using the adapter and by monitoring repeated explosions, with some delay. Detailed description of the main circuit of the electronic-relay adapter and experimental results are given. 5 figures. 2 references. /Abstracter's note: Complete translation./

Card 2/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

VOLAROVICH, M.P.; BAYUK, Ye.I.; SALEKHLI, T.M.; PAVLOGRADSKIY, V.A.

Longitudinal wave velocities in specimens of sedimentary rocks, saturated with kerosene and water, at high pressures. Izv. AN SSSR. Fiz. zem. no.3:71-75 '65. (MIRA 18:7)

1. Institut fiziki Zemli AN SSSR i Institut geologii AN AzerbSSR.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

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L 2844-66 EWT(1)/EWA(h) GW

ACCESSION NR: AP5021277 UR/0020/65/163/005/1131/1133

AUTHORS: Volarovich, M. P.; Bayuk, Ye. I.; Salekhli, T. M.

TITLE: The velocity of ultrasonic longitudinal waves at high pressures in oil and gas reservoir rocks of Azerbaidzhan

SOURCE: AN SSSR. Doklady, v. 163, no. 5, 1965, 1131-1133

TOPIC TAGS: ultrasonic wave, seismic wave, rock, high pressure/ IKL 5 radioelectric device

ABSTRACT: Studies on wave velocities were made on rocks in the Caspian lowland and the Baku Archipelago. The rocks were tested at pressures up to 4000 kg/cm^2. An IKL-5 radioelectric device was used for measuring wave velocities, and a lead zirconate and tantalate unit with natural frequency of 500 kilocycles was used in both transmitter and receiver. The sedimentary rocks were cylindrical cores, 3 cm in diameter and 3-15 cm long, taken from depths ranging from 100 to 3500 m. Tests were made on clay, siltstone, sandstone, and limestone. All pertinent properties of the rocks were measured. Experiments showed a sharp increase in velocity with pressure, with the greatest increase (up to 200%) being observed in very porous sand and clay. Change in limestone proved to be less, generally 15-45%.

Card 1/2

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L 2844-66

ACCESSION NR: AP5021277

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Saturation with kerosene increased velocity. Because of lower penetration, water did not increase velocity as much as kerosene. Where moisture caused swelling of the rock, the velocity decreased rather than increased. It is concluded that if the density and other reservoir properties of a rock have been measured, wave velocities may be predicted for various depths and water contents. The work of the authors confirms the fact that the velocity of less dense rocks changes more strongly with pressure than the velocity in denser rocks. Orig. art. has: 2 figures.

44,55

ASSOCIATION: Institut fiziki Zemli, Akademii nauk SSSR (Institute of Physics of the Earth), Academy of Sciences SSSR); Institut geologii, Akademii nauk AzerbSSR (Institute of Geology, Academy of Sciences AzerbSSR) 44,55

SUBMITTED: 25Nov64 ENCL: 00 SUB CODE: ES

NO REF SOV: 007 OTHER: 001

BVK

Card 2/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, D.V.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/3 PG - 900

AUTHOR SALECHOV D.V.

TITLE On the norm of a linear functional in the Orlicz-space and on an inner characteristic of the space L_p.

PERIODICAL Doklady Akad.Nauk 111, 948-950 (1956)
reviewed 6/1957

Let $p(u)$ $(u \geqslant 0)$ be a non-decreasing function being continuous from the right side; Let $\lim_{u \to +\infty} p(u) = 0$, $\lim_{u \to \infty} p(u) = \infty$. Furthermore let $q(v) = \sup_{p(t) \leq v} t$ and

$$M(u) = \int_0^{|u|} p(t)dt, \quad N(v) = \int_0^{|v|} q(t)dt.$$

Let L_M^* and L_N^* be Orlicz-spaces of the functions being defined on the set G of a finite-dimensional space. Let the linear functionals $l(u)$ permit the representation

$$l(u) = (u,v) = \int_G u(x)v(x)dx, \qquad v(x) \in L_N^*$$

on L_M^*. Let

$$\|v(x)\|_N = k(v)\,\|l\|.$$

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

Doklady Akad.Nauk 111, 948-950 (1956) CARD 2/3 PG - 900

Krasnosel'skij has shown that $1 \leqslant k(v) \leqslant 2$. The author investigates in detail the functional $k(v)$.

Theorem 1: There exist Orlicz-spaces L_M^* for which the values of the functional $k(v)$ fill up completely the interval $(1,2)$.

Theorem 2: Let $M(v)$ and $N(v)$ satisfy the Δ_2-condition everywhere if mes $G = \infty$, and for large u if mes $G < \infty$. Then

$$k(v) \geqslant 1 + \alpha > 1,$$

where $\alpha = \min\left\{ \inf_{\varrho_u = 1} \int_G N\left\{\operatorname{sign} u(x) p\left[|u(x)|\right]\right\} dx; \inf_{\varrho_v = 1} \int_G M\left\{\operatorname{sign} v(x)\left[|v(x)|\right]\right\} dx \right\}$

and $\varrho_u = \int_G M\left[u(x)\right] dx$; $\varrho_v = \int_G N\left[v(x)\right] dx$ $(u(x) \in L_M^*,\ v(x) \in L_N^*)$. The function $M(u)$ satisfies the Δ_2-condition for large u if there exist numbers k and u_0 such that $M(2u) \leqslant kM(u)$ for $u \geqslant u_0$.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

Doklady Akad. Nauk 111, 948-950 (1956) CARD 3/3 PG - 900

Theorem 3: Under the assumption of theorem 2 there holds the inequation

$$\left| \int_G u(x)v(x)dx \right| \leq \frac{1}{1+\alpha} \| u(x) \|_M \| v(x) \|_N \qquad (u(x) \in L_M^*,\ v(x) \in L_N^*),$$

α has the former meaning.

Theorem 4: Let $k(v) = \text{const}$ and $\text{mes } G = \infty$, then $M(u) = cu^r$, $r > 1$.

Theorem 5: Let $k(v) = \text{const}$ and $\text{mes } G = \frac{1}{M(s)} < \infty$. For $u \geq u_0$ then holds

$$M(u) = cu^r \quad (r > 1) \text{ where } M(u_0) = \max \left\{ N[p(s)]; s \right\}.$$

Theorem 6: The following assertions are equivalent: 1) $k(v) \equiv k$, 2) from $\varrho_u = 1$ there follows $\| u(x) \|_M = k$, 3) from $\varrho_v = 1$ there follows $\| v(x) \|_M = k$, 4) the totality of the functions $u(x) \in L_M^*$ for which $\varrho_u \leq 1$ is identical with the sphere of radius k in the L_M^*.

INSTITUTION: University, Voronež.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV D.V.

AUTHOR: SALEKHOV D.V. 20-3-2/46

TITLE: On the Points of Lebesgue-Orlicz (O tochkakh Lebega-Orlicha)

PERIODICAL: Doklady Akad.Nauk SSSR ,1957,Vol.116,Nr.3,pp.355-358 (USSR)

ABSTRACT: Let $p(u)$ be a function continuous from the right and not decreasing, $p(+0) = 0$, $p(+\infty) = \infty$. Let $q(s) = \sup_{p(t) \leq s} t$. Let $M(u) = \int_0^{|u|} p(t)dt$. The point x is denoted as a point of Lebesgue-Orlicz of the order $M(u)$ for the function $f(x)$ if

$$\lim_{h \to 0} \left\| M^{(-1)}\left(\frac{1}{2h}\right) \left[f(x) - f(x_0)\right] H_h(x) \right\|_M = 0.$$

Here $H_h(x)$ means the characteristic function of the interval $[x_0-h, x_0+h]$ and the norm is taken in the sense of the L_p. The points defined in this way form an intermediate class between the Lebesgue points and the points of continuity. In six theorems the author gives a detailed description of these points and their properties, e.g.:

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

On the Points of Lebesgue-Orlicz

20-3-2/46

Theorem: In order that for every bounded function every Lebesgue point is at the same time a Lebesgue-Orlicz point of the order $M(u)$ it is necessary and sufficient that $M(u)$ for large argument values satisfies the condition $M(2u) \leqslant kM(u)$.

ASSOCIATION: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)
SUBMITTED: January 28, 1957
AVAILABLE: Library of Congress

Card 2/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, D.V., Cand Phys-Math Sci -- (diss) " Functionals in the spaces of functions belonging to the Orlich classes, and singular integrals". Voronezh, 1957, 10 pp (Voronezh State Inst), 100 copies (KL, 1-58, 114)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, D.V.

Functional norms in Orlicz space. Trudy Sem.po funk.anal. no.3/4:98-102 '60. (MIRA 14:10)
(Functional analysis) (Spaces, Generalized)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, D.V.

Problem of the representation of functions belonging to Orlich classes by a singular integral. Ukr.mat.zhur. 13 no.4:34-50 '61. (MIRA 15:7)

(Integrals) (Functional analysis)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, D.V.

Example of a completely continuous integral operator acting from L_p on L_p and having a positive kernel not belonging to $L_r (r > 1)$. Usp. mat. nauk 18 no.4:179-182 Jl-Ag '63. (MIRA 16:9)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, D.V. (Voronezh)

Further on Lebesgue - Orlicz points. Ukr. mat. zhur. 17 no.4:72-81 '65. (MIRA 18:8)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, D.V.; SEMENOV, Ye.M.

Lebesgue - Banach points. Usp. mat. nauk 20 no.6:151-156 N-D '65. (MIRA 18:12)

1. Submitted Jan. 8, 1964.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEHHOV, G. S.

O razvetvlenii reshenii nelineynykh integral'nykh uravneniy. Kazan', Izv. fiz.-matem. o-va (3), 11 (1939), 151-159.

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

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S.

Salehov, G. S. On Cauchy's problem for linear partial differential equations in the domain of infinitely differentiable functions. Uspehi Matem. Nauk (N.S.) 2, no. 2(18), 226–228 (1947). (Russian)

[Summary of a Kazan thesis, 1946.] It is known that for the analytic system of equations

$$\frac{\partial^{n_i} Z_i}{\partial t^{n_i}} = F_i\left(t, x_1, \cdots, x_s; Z_1, \cdots, Z_N; \cdots; \frac{\partial^{k_0+\cdots+k_s} Z_k}{\partial t^{k_0} \partial x_1^{k_1} \cdots \partial x_s^{k_s}}; \cdots\right),$$

$i=1, 2, \cdots, N$, where $n_i > k_0$, in the "abnormal case" (when the condition $n_i \geqq \sum_{1}^{s} k_i$ is not satisfied) the formal power series solution corresponding to certain analytic initial conditions need not converge [S. Kowalevsky, J. Reine Angew. Math. 80, 1–32 (1875)]. C. Riquier showed [C. R. Acad. Sci. Paris 125, 1018–1019 (1897)], by examining particular examples, that the existence of analytic solutions of abnormal systems of linear partial differential equations depends not only on the nature of the initial data but also on the nature of the coefficients of the linear equations.

This thesis is concerned with Cauchy's problem for a system of linear partial differential equations, when the given initial data are only required to be infinitely differentiable functions. The main problems treated are the following. (1) What necessary and sufficient conditions must the infinitely differentiable functions φ_{ik_i} having a common domain of definition in $(x_1, \cdots, x_s)$-space, satisfy in order that the Cauchy initial value problem, consisting of the system of equations with constant coefficients

$$(1) \qquad \frac{\partial^{n_i} Z_i}{\partial t^{n_i}} = \sum_{j=0}^{N} \sum_{\lambda_0=0}^{n_j} \sum_{(\alpha)} A_{ij\lambda_0\lambda_1\cdots\lambda_s} \frac{\partial^{\lambda_0+\lambda_1} Z_j}{\partial t^{\lambda_0} \partial x_1^{\lambda_1} \cdots \partial x_s^{\lambda_s}},$$

$i=1, 2, \cdots, N$; $\lambda = \sum_{1}^{s} \lambda_i$, $p_i > r_{ij}$, and the initial conditions

$$\partial^{k_i} Z_i / \partial t^{k_i} |_{t=0} = \varphi_{ik_i}(x_1, \cdots, x_s),$$

$k_i = 0, 1, \cdots, p_i - 1$; $i = 1, 2, \cdots, N$, have a solution analytic in t in a neighborhood of $t=0$? (2) If there is such a solution, what is its behavior relative to the remaining variables $x_1, \cdots, x_s$? Necessary and sufficient conditions on the φ_{ik_i} are obtained in terms of the sequence of numbers $\limsup |\varphi_{ik_i}^{(n)}(x_1, \cdots, x_s)| \leqq M_n$, where n is the sum of the orders of the partial derivatives with respect to $x_1, \cdots, x_s$. The same problems are investigated when the coefficients of the system (1) are themselves infinitely differentiable functions. Using the theory of entire, analytic, quasi-analytic and infinitely differentiable functions in the sense of Gevrey, the author solves the above problems for a broad class of systems of equations, irrespective of the normality or abnormality of the system.

Dealing first with a single equation, the problems are solved completely for the equations

Source: Mathematical Reviews, 1/2 Vol 10, No. 1

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

Salehov, H. S.

(2) $\partial^2 Z/\partial t^2 \pm \partial^2 Z/\partial x^2 = 0,$

obtaining as special cases known results of S. Kowalevsky, Le Roux, Holmgren, Goursat, and Gevrey for the heat equation. In the discussion of the system (1) the concept of the "weight" δ of the system is found useful. By definition, δ is the minimum of $(p_i - r_i)/q_i$, $i = 1, \cdots, N$, where, for each i, r_i is the maximum of the r_{ij} $(j = 1, \cdots, N)$, and q_i is the maximum of the sums $\sum_{k=1}^{N} \lambda_k$ for the given index i. The author shows that the weight of a system of equations serves to characterize the admissible initial data φ_{ik} and the integrals of the corresponding Cauchy problem. This leads to a classification of systems according to their weight. The customary distinction of "normal" and "abnormal" corresponds to weights greater than or equal to 1 and less than 1, respectively. The majorant series employed enable a determination of a nonlocal domain of convergence of the solutions, even in the domain of infinitely differentiable functions. The results obtained for (2) are extended to the general linear equation with constant coefficients, certain kinds of linear equations with infinitely differentiable coefficients and finally to systems of linear equations. The last part deals with weight preserving transformations of equations, and their application to the solution of certain equations. For example, in each case, for the appropriate equation (2), generalizations of d'Alembert's solution of the vibrating string equation and Poisson's integral for the heat equation are obtained. *J. B. Diaz* (Providence, R. I.).

Source: Mathematical Reviews, 7/2 Vol 10, No. 1

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

Salehov, G. S. A generalization of the formulas of d'Alembert and Poisson. Uspehi Matem. Nauk (N.S.) 2, no. 4(20), 175–182 (1947). (Russian)

Consider the initial value problem $\partial^n u/\partial t^n = \partial^n u/\partial x^n$, $\partial^k u/\partial t^k|_{t=0} = \varphi_k(x)$ $(k=0, 1, \cdots, n-1)$. The formula

$$(*)\quad u(t,x) = n^{-1}\sum_{l=0}^{n-1}\left\{\varphi_0(\epsilon^l t+x) + \sum_{k=1}^{n-1}\int_0^t \frac{(t-\xi)^{k-1}}{(k-1)!}\varphi_k(\epsilon^l\xi+x)d\xi\right\},$$

where ϵ is a primitive nth root of unity, generalizes d'Alembert's formula

$$u(t,x) = \tfrac{1}{2}\{\varphi_0(x+t)+\varphi_0(x-t)\} + \tfrac{1}{2}\int_{x-t}^{x+t}\varphi_1(\xi)d\xi,$$

for the case $n=2$. Formula (*) is a special case of a result given in the first section of the paper. The last section is concerned with integral formulas for solutions of $\partial^n v/\partial t^n = \partial^{2n} v/\partial t^{2n}$ which possess properties analogous to Poisson's integral formula

$$v(t,x) = \int_0^\infty t^{-1}\varphi(\xi)e^{-1(x-\xi)^2/t}d\xi,$$

for the heat equation $(n=1)$. These results had been announced previously [Uspehi Matem. Nauk (N.S.) 2, no. 2(18), 226–228 (1947); these Rev. 10, 44]. *J. B. Dias.*

Source: Mathematical Reviews, Vol 10 No. 6

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.

Salehov, G. On Cauchy's problem for a class of partial differential equations in a region of arbitrarily smooth functions. Izvestiya Kazan. Filial. Akad. Nauk SSSR. Ser. Fiz.-Mat. Tehn. Nauk 1, 63–74 (1948). (Russian)

For the partial differential equation

$$\partial^p z/\partial t^p-(\pm)t^m\partial^q z/\partial x^q=0, \quad m\geqq 0,$$

with the initial conditions $\partial^k z/\partial t^k=\phi_k(x)$, $k=0, 1, 2, \cdots, p-1$, the author considers the problem of relating the analytic behavior of the solution to the smoothness, i.e., differentiability, properties of the initial functions. He utilizes a classification of infinitely differentiable functions due to Gevrey [Ann. Sci. École Norm. Sup. (3) 35, 129–190 (1918)] and shows that a necessary and sufficient condition that the solution of the above equation be unique and analytic in t for some neighborhood of $t=0$ is that $\alpha\leqq p/q$, where α is the Gevrey index of $\phi_k(x)$. If $\alpha<p/q$, the solutions are entire. The proof depends upon a detailed investigation of the asymptotic behavior of various special functions.

R. Bellman (Santa Monica, Calif.).

SOV. MATHEMATICAL REVIEW (unclassified)
Vol. XIV, No 3, pp233-240 March 1953

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.

PA 17/49T5

USSR/Academy of Sciences Jul/Aug 48
Mathematics - Biography

"Scientific Researches of the Mathematical Department of the Physicotechnical Institute of the Kazan Affiliate of the USSR Academy of Sciences," G. Salekhov, 4 pp

"Uspekhi Matemat Nauk" Vol III, No 4 (26)

General discussion of the principal results of research by the most prominent members: N. G. Chebotaryev, N. N. Meyman, G. S. Barkhin, A. N. Khovanskiy, etc.

[redacted] 17/49T5

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SAIFKHOV, G. S.

21339 SAIFKHOV, G. S. I KNOVANSKIY, A. N. B. M. Gagaev. (Matematik K 25 - Letiyu nauch. Ped. Deyatel'nosti) Uspekhi matem. Nauk, 1949, Vyp. 3 S. 177-79 S. Portr.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S.

Salekhov, G. S. On the theory of the calculation of series. Uspehi Matem. Nauk (N.S.) 4, no. 4(32), 50-82 (1949). (Russian).

This paper gives a very elementary unified approach to some convergence criteria for series of positive terms. The same approach is applied also to the study of the remainder and the improvement of the rate of convergence through Kummer's transformation. The treatment is far from exhaustive and references to similar studies by Pringsheim and others are conspicuous by their absence. [Remark by reviewer: The open problem in the footnote on p. 61 is answered affirmatively by the example $y_n = n^{-2}$, $\alpha_n = n^3+1$.]

A. Dvoretzky (Jerusalem).

Source: Mathematical Reviews, Vol. 12 No. 7

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

Salehov, G. S. On the asymptotic behavior of the integrals of certain linear partial differential equations near to the boundary of the region of their existence. Izvestiya Kazan. Filial. Akad. Nauk SSSR. Ser. Fiz.-Mat. Tehn. Nauk **2**, 77–86 (1950). (Russian)

In this paper the author continues his investigation in the paper reviewed above of the relation between the structural properties of the solutions and initial functions of the above partial differential equations and establishes the converse of the theorem stated above. *R. Bellman.*

SO: MATHEMATICAL REVIEW (unclassified)
VOL XIV, No 3, pp233-240 March 1953

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S.

Salekhov, G. S. **On the problem of Cauchy-Kovalevskaya for a class of linear partial differential equations in the domain of arbitrarily smooth functions.** Izvestiya Akad. Nauk SSSR. Ser. Mat. 14, 355–366 (1950). (Russian)

Consider the linear partial differential equation

$$(*) \qquad \partial^p z/\partial t^p - \epsilon t^m Dz = 0,$$

where $\epsilon = \pm 1$; m is a nonnegative integer,

$$D = \sum_{(\lambda)} A_{\lambda_1 \cdots \lambda_s} \partial^\lambda / \partial x_1^{\lambda_1} \cdots \partial x_s^{\lambda_s},$$

and $A_{\lambda_1 \cdots \lambda_s}$ are constant coefficients. The author raises the following two questions concerning the solution of the Cauchy-Kowalewsky problem for (*): (1) What necessary and sufficient conditions must be satisfied by the given initial data $\varphi_k(x_1, \cdots, x_s)$, defined in a certain closed domain g of $(x_1, \cdots, x_s)$-space, in order that the Cauchy problem for (*), with initial conditions

$$(**) \qquad \partial^k z(0, x_1, \cdots, x_s)/\partial t^k = \varphi_k(x_1, \cdots, x_s),$$

$k = 0, 1, \cdots, p-1$, possess a solution which is analytic in the (real or complex) variable t in a neighborhood of $t = 0$? (2) If such a solution exists, what is its analytic behavior with respect to $(x_1, \cdots, x_s)$? In an earlier paper [Doklady Akad. Nauk SSSR (N.S.) 59, 857–859 (1948); these Rev. 9, 441] the author considered these questions for the special case of (*): $\partial^p z/\partial t^p - \epsilon t^m \partial^q z/\partial x^q = 0$. A function $\varphi(x_1, \cdots, x_s)$ is said to be of class $\alpha > 0$ in a closed domain g with respect to the operator D provided that there exist positive constants M and H such that $|D^n \varphi(x_1, \cdots, x_s)| \leqq M(n!)^\alpha / H^n$, for any $(x_1, \cdots, x_s)$ in g and any $n = 1, 2, \cdots$. [This notion is related to that of the classes of infinitely differentiable functions of M. Gevrey, Ann. Sci. École Norm. Sup. (3) 35, 129–190 (1918).] By a solution of (*) in a domain G is meant a function which satisfies (*) in G and is such that all of its derivatives which appear in D are continuous in G. Question (1) is answered by theorem 1: The Cauchy-Kowalewsky problem (*), (**) has a solution which is analytic with respect to t if and only if the initial data appearing in (**) are of class $\alpha \leqq p$ with respect to D in g. If $\alpha = p$, then the solution is analytic in $|t| < R$, where R is a certain positive number. If $\alpha < p$, then the solution is an entire function with respect to t. Question 2 is answered by theorem 2: If the initial data satisfy the necessary and sufficient conditions of theorem 1, and G is the domain of definition of the solution in $(t, x_1, \cdots, x_s)$-space, then the solution is (in an obvious sense) of class α with respect to D in any closed, bounded subset of G. *J. B. Diaz.*

Source: Mathematical Reviews, Vol. 12, No. 5, 1

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S. FA 242T72

USSR/Mathematics - Reverse Problem Sep/Oct 52

"Question Concerning the Problem Inverse to the Cauchy-Kovalevskaya Problem," G. S. Salekhov and V. R. Fridlender

"Usp Matemat Nauk: Vol 7, No 5(51), pp 169-192

The Cauchy-Kovalevskaya problem is to find the solutions of the Cauchy problem which are analytical in one or more variables (the so-called main variables, which generally speaking can be complex). This article expounds a few results obtained in this field mainly by Kazan' mathematicians.

242T72

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

USSR/Mathematics - Approximation, 11 Jan 52
Continued Fractions

"Application of the Method of Continued Fractions (Kettenbrüchen) to the Solution of Quadratic-Operator and Functional Equations," G. S. Salekhov, Phys Tech Inst, Kazan Affiliate, Acad Sci USSR

"Dok Ak Nauk SSSR", Vol LXXXII, No 2, pp 201-204

Considers the quadratic-operator eq $HL^2x - Lx = x$, where L is the desired operator and H is a certain linear operator which transfers the elements of a normed space X into X. Gives an actual example of the proposed method;

202T73

USSR/Mathematics - Approximation, 11 Jan 52
Continued Fractions
(Contd)

e. g., solves for x(s) in the eq:

$x(s) = \frac{s}{4}\int_0^1 e^{-st}x^2(t)dt + 3/4 + 1/4e^s$ (the exact soln being $x = 1$). Submitted by Acad I. G. Petrovskiy 10 Nov 51.

202T73

SALEKHOV, G. S.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S.

USSR/Mathematics - Approximations, 1 Feb 52
Newton's Method

"Convergence of the Process of Tangent Hyperbolas," G. S. Salekhov, Phys-Tech Inst, Kazan Affiliate, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXXII, No 4, pp 525-528

Proposes a more powerful method than Newton's for solving general nonlinear functional eqs $P(x) = 0$ by an iterative process and investigates its convergence. Applies the method to 2 examples and compares the rate of convergence with that by Newton's and L. V. Kantorovich's methods. Submitted by Acad I. G. Petrovskiy 10 Nov 51.

213T90

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S. 11 Mar 53

USSR/Geology - Petroleum Wells

"Problem of Optimal Exploitation of Petroleum Deposits," G.S. Salekhov and N. F. Ivanov; Phys-Tech Inst, Kazan Affil, Acad Sci USSR

DAN SSSR, Vol 89, No 2, pp 237-239

V.N. Shchelkachev (DAN SSSR, 52, 5, 399 (1946)) discussed the problem of exploitation of wells with const discharge. Author analyzes this problem from point of view of selection of discharge law and applicable practical conditions. Presented by Acad A. I. Nekrasov. Recd 24 Mar 52.

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S.

USSR/Geophysics - Oil Wells 21 Aug 53

"Exploitation of Oil Wells in Anisotropic Strata With Bottom Water," G. S. Salekhov and V. L. Danilov, Physicotech Inst, Kazan Affli Acad Sci USSR

DAN SSSR, Vol 91, No 6, pp 1297-1300

Det the output Q and time T of waterless exploitation of a well for the case of stationary filtration of incompressible fluids in an anisotropic stratum. Follows N. K. Girinskiy's derivation of eqs (Opredeleniye Koeffitsiyenta Fil'tratsii

275T62

[Determination of the Coef of Filtration], Moscow, 1950). Presented by Acad A. I. Nekrasov 21 Jun 53.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S. and MERTVETSOVA, M. A.

"The Convergence of Some Iterative Processes", Iz. Kazan Fil. AS USSR, 5th edition, 1954.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S., IVANOV, N. F. and SVIRSKIY, I. V.

"The Determination of the Optimum Conditins of Exploitation of Rock-Oil Wells in Strata With Elastic Conditions", Iz. Kazan Fil. AS USSR, 5th edition, 1954.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G. S.

"Direct and Reverse Problems on the Furtherance of the Water-Rock Oil Contact", Iz. Kazan Fil. AS USSR, 5th edition, 1954.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S., DANILOV, V. L., IVANOV, N. F. and KHOVANSKIY, A. N.

"The Question of Irrigation of Rock-Oil Wells in Strata With Sole Water", Iz. Kazan Fil. AS USSR, 5th edition, 1954.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

124-57-1-760

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 100 (USSR)

AUTHOR: Salekhov, G.S.

TITLE: Direct and Reverse Problems on the Displacement of the Water-petroleum Contact Boundary (Pryamyye i obratnyye zadachi o prodvizhenii vodo-neftyanogo kontakta)

PERIODICAL: Izv. Kazan. fil. AN SSSR, ser. fiz.-matem. i tekhn. n., 1954, Nr 5, pp 3-15

ABSTRACT: The plane filtration problems on the displacement of the water-petroleum contact boundary in a porous medium are classified by the author as "direct" and "reverse". The object of a direct problem is the determination of the laws governing the displacement of the water-petroleum contact boundary for given injection-well and producing-well pressures as functions of the coordinates and the time. In a reverse problem the law governing the motion of the water-petroleum contact boundary is given, also the pressure or the discharge rate of either the producing well or the injection well, and the remaining discharge rates and pressures are sought (as functions of the coordinates and the time). The reverse problem is formulated in the same manner when, in lieu of a producing

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124-57-1-760

Direct and Reverse Problems on the Displacement of the Water-Petroleum (cont.)

and an injection shaft, a network of producing and injection wells is specified as a system of sources and sinks or as a system of wells with finite radii, and it is shown in which of these cases an exact mathematical solution is possible. The direct problem on the linear and radial displacement of a water-petroleum contact boundary in layers having a non-constant thickness and permeability is solved, also a special reverse problem for the radial-circular displacement of a water-petroleum contact boundary. The introduction contains a brief survey of studies devoted to the solution of direct problems on the motion of petroliferous contours. Bibliography: 19 references

G.N.Pykhteyev

1. Fluid flow--Boundary layer--Mathematical analysis 2. Petroleum-water --Boundary layer--Mathematical analysis

Card 2/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.; DANILOV, V.L.; IVANOV, N.F.; KHOVANSKIY, A.N.

Flooding of oil wells having bottom water strata. Izv. Kazan. fil. AN SSSR. Ser. fiz.-mat. i tekh. nauk no.5:16-39 '54. (MLRA 8:7)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala AN SSSR.
(Oil field flooding)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV G.S.

IVANOV, N.F.; SALEKHOV, G.S.; SVIRSKIY, I.V.

Determining optimal operating conditions for oil wells in elastic strata. Izv. Kazan. fil. AN SSSR. Ser. fiz.-mat. i tekh. nauk no.5: 40-51 '54. (MIRA 8:7)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala AN SSSR.
(Petroleum engineering)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/1 PG - 86
AUTHOR SALECHOV G.S., MERTVECOVA M.A.
TITLE On the convergence of certain iteration processes.
PERIODICAL Izvestija Kazansk. Fil.Akad.Nauk, Ser. fiz.-Mat. techn. Nauk 5, 77-108 (1954)
reviewed 6/1956

In the first chapter of this paper different formar investigations are discussed on the Newton iteration method and its generalizations, whereby the survey is not very complete and does not always seem to be sufficiently critical. So the authors say e.g. that E.Bodewig has obtained numerous results and ideas all of which can already be found in the fundamental paper of Schröder in 1870 which has apparently been consulted only very superficial by the authors. In the second chapter the "method of the contact hyperbolae" is discussed and this at once for functional equations in Banach spaces. Thereby the cubic convergence is obtained. Now, the highly general result is applied specially to integral equations as well as to systems of algebraic equations.- In the third chapter conditions are discussed for the case that iteration processes for solving functional equations give only lower and upper functions resp. to the solutions. Finally in the last chapter an iteration method is considered which is applicable for solving usual equations as well as quadratic operator equations and for the proof of convergence of which the authors operate with approximative fractions of a certain continued fraction.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

Book—1679. Salek[illegible] G. S. Summation of series [Vychisleniye ryadov], Moscow, Gos. Izd[illegible] Teor. Lit., 1955, 143 pp., 3r. 60 k.

The monograph under consid[illegible] divided into 5 chapters and an appendix with 38 subsections. It [illegible] common method of establishing several criteria of convergence, [illegible] the remainders, and of improving the convergence of series [illegible]

First chapter is based upon the [illegible] Kum[illegible] [illegible]. It gives some general criteria of convergence and [illegible] presents the corresponding methods of speeding up the convergence [illegible] series. The usual sufficient conditions by d'Alembert, Raabe, Ga[illegible] [illegible], etc., seem to be only special cases of the author's general c[illegible]. The following two sections illustrate on various concrete [illegible] the theory given in the first chapter.

Of special significance for mathematical physics and eng[illegible] [illegible] ence is the fourth main part about increasing the convergence of [illegible] in special functions ([illegible], Legendre and Tschebyshev polynomials, Bessel functions, etc.). Author's methods are much more gene[illegible] the well-known procedure given by A. N. Krylov for the [illegible] [illegible] series. Fifth chapter brings several integral [illegible] for finite sums and for infinite series. The appendix [illegible] cal methods of the first three chapters to do[illegible]

Paper is good, print careful. This fine book is [illegible] commended to engineers and physicists.

V. Vod[illegible], Czechoslovak[illegible]

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

Statement and method of solving hydrodynamic problems for controlling the movement of the oil-water boundary. Izv.Kazan.fil.AN SSSR. Ser. fiz.-mat.i tekh.nauk. no.6:3-38 '55. (MIRA 8:12)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala Akademii nauk SSSR.
(Oil field flooding) (Petroleum engineering)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

SALEKHOV, G.S.

Applying one method of minimum error to solving the problem of controlling water-oil boundary movement. Izv.Kazan.fil. AN SSSR. Ser.fiz.mat.i tekh.nauk No.8:3-15 '55. (MLRA 10:8)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala Akademii nauk SSSR.
(Oil field flooding)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

Salekhov, G.S.

2378. Salekhov, G. S., Method of solving the problem of control of the motion of a petroleum-bearing contour in beds having water-pressure conditions (in Russian), *Izv. Kazansk. fil. Akad. Nauk SSSR., Ser. fiz.-matem. i tekhn. nauk* no. 8, 16-29, 1955; *Ref. Zh. Mekh.* no. 10, 1956, Rev. 6757.

For a solution of the problem studied earlier by the author (title source 5, 3-15, 1954), use is made of minimum quadratic error with an assumed norm. The corresponding expression of quadratic error varies as a result of the outputs of the operational and pressure crevices. The position of the crevices is fixed. The bed liquid is everywhere homogeneous; "the petroleum-bearing contour"; the boundary separating the water and the petroleum, is represented by the line of the particles recorded. The law of displacement of this line should, in the problem in question, give a minimum deviation in the sense of a mean quadratic error from the given law of displacement of the petroleum-bearing contour.

For solution of the problem an expression was set up for the mean quadratic error of the boundary condition, which should be satisfied by the pressure gradient of the mobile boundary of demarcation of the liquids. In this, use is made of the pressure distribution which is known for the case of a homogeneous flow. As a result of the variation of the quadratic functional error, a linear system of equations is obtained, from which the only possible dis-

1/2

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

USSR/ Geology - Oil wells

Card 1/1 Pub. 22 - 7/51

Authors : Salekhov, G. S.

Title : Formulation and methods of solving hydrodynamic problems on controlling the movement of an oil-bearing contour

Periodical : Dok. AN SSSR 101/5, 809-812, April 11, 1955

Abstract : Assuming, that the law of the movement of the oil-bearing contours is known, a solution of a hydrodynamic problem on the distribution and output of oil wells is presented. Eight USSR references (1945-1953). Diagram.

Institution : Kazan Branch of the Acad. of Sc., USSR, Physico-technical Institute

Presented by: Academician A. I. Nekrasov, January 3, 1955

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

USSR/Geology - Oil fields

Card 1/1 Pub. 22 - 9/47

Authors : Salekhov, G. S., and Chugunov, V. D.

Title : Some problems in controlling the movement of an oil bearing contour

Periodical : Dok. AN SSSR 101/6, 1013 - 1017, Apr. 21, 1955

Abstract : The solution of three problems dealing with the control of the movement of oil contours is given. One USSR reference (1955). Diagrams.

Institutkon : Acad. of Sc., USSR, Kazan Branch, Physico-Technical Institute

Presented by: Academician A. I. Nekrasov, January 5, 1955

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

Determination of the pressure function in nonhomogeneous petroleum deposits. Dokl.AN SSSR 105 no.6:1174-1176 D '55.

1.Fiziko-tekhnicheskiy institut Kazanskogo filiala Akademii nauk SSSR. Predstavleno akademikom L.I.Sedovym.
(Petroleum engineering) (Hydrostatics)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SOV/124-57-8-9204

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 8, p 90 (USSR)

AUTHOR: Salekhov, G. S.

TITLE: Boundary Conditions Which Admit a Given Solution (Krayevyye zadachi, dopuskayushchiye dannoye resheniye)

PERIODICAL: Tr. 3-go Vses. matem. s"yezda. Vol I. Moscow, AN SSSR, 1956, pp 211-212

ABSTRACT: Ref. RZhMekh, 1957, abstract 8099

Card 1/1

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SOV/124-57-7-8099

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 7, p 98 (USSR)

AUTHOR: Salekhov, G. S.

TITLE: On Boundary Problems Admitting a Given Solution (O krayevykh zadachakh, dopuskayushchikh dannoye resheniye)

PERIODICAL: Izv. Kazansk. fil. AN SSSR ser. fiz.-matem. i tekhn. n., 1956, Nr 9, pp 3-12

ABSTRACT: On the assumption that the ordinary boundary problem defined by the equations (1) and (2) given below is correctly expressed, the following problem is posed for the function $u = u(x_1, \ldots, x_n)$ which satisfies the second-order partial-differential equation

$$L(x_1, \ldots, x_n, u, u_1, u_2 \ldots u_n, u_{11}, u_{12}, \ldots u_{nn}; a_1, \ldots, a_M)=0$$

$$u_j = \frac{\partial u}{\partial x_i}, \qquad u_{jk} = \frac{\partial^2 u}{\partial x_j \partial x_k} \qquad (1)$$

which is given in the range $G \supset (x_1, \ldots, x_n)$ and determined for the

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parameters α_k which vary in the range $G_\alpha \supset (\alpha_1, \ldots, \alpha_M)$ and which also satisfies the boundary conditions

$$K_i(x_1, \ldots, x_n; u, u_1, \ldots, u_n; u_{11}, u_{12}, \ldots, u_{nn}; \beta_1^{(i)}, \ldots, \beta_{N_i}^{(i)}) = 0 \quad (2)$$

where $i = 1, \ldots, m$ and $\{\beta_{s_i}^{(i)}\}$ is a finite number of parameters varying within the ranges $G_\beta^{(i)}$ (the ranges G_α and $G_\beta^{(i)}$ may overlap partially or wholly): Determine the values of the parameters $\{\alpha_k\}$ and $\{\beta_{s_i}^{(i)}\}$ in the ranges G_α and $G_\beta^{(i)}$, respectively, in such a manner that the preselected function $v(x_1, \ldots, x_n)$ in the range G would in some manner satisfy in the best possible way the equation (1) and the boundary conditions (2). Satisfying (1) and (2) in the best possible way is understood here to mean the following: The parameters $\{\alpha_k\}$ and $\{\beta_{s_i}^{(i)}\}$ must be determined in such a way that the functions of the errors resulting from the substitution of $v(x_1, \ldots, x_n)$ for u in (1) and (2) would deviate to the least possible extent from zero in the sense of some assumed norm in the ranges of G and G_i. These norms may, for example, be assumed by means of applying to the solution of the problem the method of least squares, orthogonal projections, sub-ranges, collocations, and other well-known methods. If the boundary problems in the usual arrangement are termed as direct ("usual arrangement" implying that the equations

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SOV/124-57-7-8099

On Boundary Problems Admitting a Given Solution

boundary conditions, and parameters entering into them are given and the solution is sought by means of a variation of the arbitrary parameters introduced into the class of possible solutions), then the problem formulated above may be termed as reverse. The solution of this problem is ultimately reduced to the solution, generally speaking, of a system of nonlinear algebraic or transcendental equations relative to the unknowns $\{a_k\}$ and $\{\beta_q^{(i)}\}$, which is shown by the author in an example of the application of the method of least squares. The evaluation of the permissible least mean-square error for the error function in the solution of this problem may be achieved in a comparatively easy way. The evaluation, however, of the error allowed between the desired v and the possible solution of u in the sense of some assumed norm $\| v-u \|$ is more difficult to achieve in practice, and this question must be the object of independent investigations in every specific case. The paper also presents the arrangement of the reverse problem in a case where the equation (1) and the boundary conditions (2) contain, instead of arbitrary parameters, a finite number of unknown functions. The paper further gives a definition of a correctly arranged reverse boundary problem and investigates the question of the factors that govern the tractability, the number of possible solutions, and the accuracy of the solution of a reverse boundary problem. By way of an example, the author analyzes two specific problems, one of which is arranged correctly and the

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SOV/124-57-7-8099

On Boundary Problems Admitting a Given Solution

other incorrectly, as well as a problem on the control of an oil bank which was previously discussed in detail by the author (RZhMekh. 1956, abstract 760). Having in mind the application of the reverse boundary problem, the author designates it as a problem of control by the process under investigation in a desired direction. In the last part of the paper the author adduces the general arrangement of boundary problem which admit a given class of solutions possessing some predetermined characteristics. As a specific example, a problem which is the reverse companion of the Cauchy Kovalevskiy problem may be referred to this type of problems. Bibliography: 18 references.

G. N. Pykhteyev

Card 4/4

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.

15-57-7-10355

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7, p 252 (USSR)

AUTHOR: Salekhov, G. S.

TITLE: Determination of Pressure in Heterogeneous Layers of Petroleum Deposits (K opredeleniyu davleniya v neodnorodnykh plastakh neftyanykh mestorozhdeniy)

PERIODICAL: Izv. Kazansk. fil. AN SSSR, ser. fiz.-matem. i tekhn. n., 1956, Nr 9, pp 49-52

ABSTRACT: The author presents a formula for determining the function of pressure in heterogeneous layers of petroleum deposits, when $\sqrt{kh}$ is a harmonic function and the deposit is exploited by means of a number n of arbitrarily located wells (here k represents permeability and h the productive thickness of the layer). Movement of the liquid is subject to the linear law of seepage. The lifting force is assumed

Card 1/2

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, G.S.; SIDORENKO, V.S.; CHUGUNOV, V.D.

Problem of directing the movement of the water-oil boundary. Neft.khoz.34 no.8:30-35 Ag '56. (MLRA 9:10)
(Petroleum engineering)

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124-58-9-10134

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 104 (USSR)

AUTHORS: Danilov, V. L., Salekhov, G. S., Tsybul'skiy, G. P.

TITLE: Investigations on the Theory of Filtration of Liquids in Oil-bearing Sands in the Kazan Branch of the Academy of Sciences, USSR, 1951-1957 (Brief Survey) [Issledovaniya po teorii fil'tratsii zhidkostey v neftyanykh plastakh v Kazanskom filiale Akademii nauk SSSR v 1951-1957 gg. (Kratkiy obzor)]

PERIODICAL: Izv. Kazansk. fil. AN SSSR. Ser. fiz.-matem. i tekhn. n., 1957, Nr 11, pp 5-14

ABSTRACT: A brief survey of investigations performed by the Mathematics Section of the Institute of Engineering Physics of the Kazan Branch Academy of Sciences, USSR, on the theory of filtration. During 1951-1957 the solution of the problem of controlling the displacement of oil banks was accomplished; therein special cases were analyzed, comprising the displacement by means of the yield control of the wells alone, the disposition of the wells alone, and the combined yield control and location of only a specified number of wells. A number of investigations were devoted to problems of tracking the movement of an oil bank, the

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Investigations on the Theory of Filtration of Liquids (cont.)

exploitation of wells with bottom water, and the determination of the pressure function for nonhomogeneous layers; also investigated, among others, was the optimization problem - from the point of view of recovery - for the exploitation of wells, the problem of the yield of a well with an arbitrary circle of influence, etc. Bibliography: 55 references.

V. A. Karpychev

1. Petroleum industry--USSR 2. Geophysics--USSR 3. Liquids--Properties 4. Sand --Properties 5. Mathematics--Applications

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SOV/124-58-4-4330

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 4, p92(USSR)

AUTHOR: Salekhov, G.S.

TITLE: A Contribution to the Solution of Oil-bank Displacement Control by Means of the Method of Trigonometric Approximations (K resheniyu zadach upravleniya dvizheniyem kontura neftenosnosti metodom trigonometricheskoy approksimatsii)

PERIODICAL: Izv. Kazansk. fil. AN SSSR, ser. fiz.-matem. i tekhn. n., 1957, Nr 11, pp 15-22

ABSTRACT: The article is a continuation of the previous work of the author (Izv. Kazansk. fil. AN SSSR, ser. fiz.-matem. i tekhn. n., 1955, Nr 6, 1954, Nr 5, 1956, Nr 9; RZhMekh, 1956, Nr 8, abstract 5308; 1957, Nr 1, abstract 760; Nr 7, abstract 8099; Dokl. AN SSSR, 1955, Vol 101, Nr 5, p 809, Nr 6, p 1013; RZhMekh, 1956, Nr 8, abstracts 5313 and 5314. A case of a horizontal layer is considered wherein water is under pressure and the thickness and permeability are constant. The viscosity of the water and oil are considered to be equal, and the motion is assumed to be in accordance with the linear law of seepage. In order to arrive at the solution, the difference $E = \overline{V}_n - V_n$ is considered,

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A Contribution to the Solution of Oil-bank Displacement Control (cont.)

where $\overline{V}_n$ and V_n are the assumed and the actual normal velocities of the motion of the oil bank. The difference

$$\mathcal{E} = \mathcal{E}\,(\theta, r, t, \phi_1, \ldots, \phi_{n+\ell};\ \rho_1, \ldots, \rho_{n+\ell};\ q_1, \ldots, q_{n+\ell})$$

is a certain known error function depending on $3(n+\ell)$ parameters: (ϕ_i, ρ_i) being the polar coordinates of the wells, and q_i being the running volumetric yields of the wells. Indices $i = 1, \ldots, n$ correspond to the producing wells and $E = n+1, \ldots, n+\ell$ to the injection wells. Having assumed that for the given mode of contraction, E is a sufficiently smooth function of the arc of the oil-bearing contour taken as an abscissa, the author expands the difference E into a Fourier series and finds then the unknown parameters ϕ_i, ρ_i, and q_i from the condition that the first coefficients of the resultant series are equal to zero. The mean-square error of the deviation of the velocities V_n and $\overline{V}_n$ allowed therein is determined on the basis of the Parseval equation. The author considers the possibility of superposition of the solutions received for several problems of oil-bank control having the same law of contraction of the oil-bearing contour, and in particular for deposits with a large number of wells. The following theorem is proved: If $n_1+\ldots+n_N$ wells are distributed over the coordinates (ϕ_{ij}, ρ_{ij}) $(i = 1, \ldots, n_j;\ j=1, \ldots, N)$ of a certain oil-bearing area, and the yields of the wells are determined

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A Contribution to the Solution of Oil-bank Displacement Control (cont.)

(with any arbitrary $c_j > 0$) by the formula

$$\bar{q}_{ij} = c_j q_{ij} \left(\sum_{j=1}^{N} c_j \right)^{-1}$$

then the total mean-square error I will not exceed the maximum value of the mean-square errors $I_j (j=1, \ldots, N)$ which would be obtained by the individual solution of $n_j (j=1, 2, \ldots N)$ problems for the corresponding number of bores:

$$I < I = \max \{ I_1, \ldots, I_N \}$$

Bibliography: 5 references.

P. F. Fil'chakov

1. Petroleum--Production 2. Water--Applications 3. Petroleum--Motion
4. Wells--Control systems

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Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 99 (USSR)

AUTHORS: Salekhov, G.S., Starshinova, L.V.

TITLE: To the Determination of the Pressure Function in Nonhomogeneous Layers (K opredeleniyu funktsii davleniya v neodnorodnykh plastakh)

PERIODICAL: Izv. Kazansk. fil. AN SSSR. Ser. fiz.-matem. i tekhn. n., 1957, Nr 11, pp 143-148

ABSTRACT: The solution of the equation

$$L(p) = \frac{\partial}{\partial r}\left(rk\frac{\partial p}{\partial r}\right) + \frac{1}{r}\frac{\partial}{\partial \theta}\left(k\frac{\partial p}{\partial \theta}\right) = 0$$

which corresponds to the steady-state pressure distribution in a layer with variable permeability $k(r, \theta)$ for the case of an annular layer is sought approximately in the form

$$p = p_0 + \left[u_0 + \sum_{s=1}^{n} u_s(r, 0)\right] \log(r/R)$$

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To the Determination of the Pressure Function in Nonhomogeneous Layers

and

$$u_s(r,\theta) = (r - a)^s (A_s \cos s\theta + B_s \sin s\theta$$

where a and R are the radii of the well and of the circle of influence, respectively, while the constants u_o and p_o are selected on the basis of a rigorous fulfillment of the boundary conditions (constancy of the pressure at the well and along the circle of influence). The constants A_s and B_s, it is suggested, are to be determined either by the method of least squares from the condition of a minimum value of the integral

$$I^2 = \int_0^{2\pi} \int_a^R L^2(p)\, r\, dr\, d\theta$$

or by Ritz's method from the condition of a minimum value of the integral

$$I[p] = \int_0^{2\pi} \int_a^R [(\partial p/\partial r)^2 + \frac{1}{r^2}(\frac{\partial p}{\partial \theta})^2]\, k\, r\, dr\, d\theta$$

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To the Determination of the Pressure Function in Nonhomogeneous Layers

A_s and B_s have been computed for $s=1.2$, using either method for the case of a harmonic $\sqrt{k} = r \cos 0 + 2R$; the results obtained are compared with the exact solutions; the deviations are found not to exceed 0.3%.

V. A. Maksimov

1. Liquids--Pressure 2. Fluid flow--Mathematical analysis 3. Wells--Mathematical analysis 4. Integral equations--Applications 5. Hydrodynamics--USSR

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Salekhov, G.S.

16(1),16(2) SOV/42-14-1-27/27

AUTHORS: Leonidov, K.S., and Rakova, E.S.

TITLE: New Publications on Applied Analysis and Numerical Mathematics (Novyye izdaniya po prikladnomu analizu i vychislitel'noy matematike)

PERIODICAL: Uspekhi matematicheskikh nauk, 1959, Vol 14, Nr 1, pp 261-265 (USSR)

ABSTRACT: It is stated that in the USSR there exists no periodical on numerical mathematics and similar domains. The papers of these domains chiefly appear in the serie. "Publications on Applied Analysis and Numerical Mathematics" (BPAVM) and in single collected volumes. The series BPAVM began in 1955 and until now it contained the following monographies: 1. G.S.Salekhov "Calculation of Series"; 2. A.N.Khovanskiy "Application of Continued Fractions in the Approximate Analysis"; 3. V.S.Ryaben'kiy, A.F.Filippov "Stability of Difference Equations"; 4. G.S.Khovanskiy "Nomograms"; 5. S.M.Nikol'skiy "Quadrature Formulas"; 6. M.A.Kartsev "Arithmetic Devices of Electronic Digit Apparata"; 7. Yu.V. Vorob'yev "Momentum Method in Applied Mathematics"; 8. Ye.A. Zhogolev, G.S.Roslyakov, N.P.Trifonov, M.R.Shura-Bura "System of Standard-Subprograms".
There appeared the following collected volumes: "Numerical

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New Publications on Applied Analysis and Numerical Mathematics

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Mathematics and Computing Technics" (VMVT) since 1953, "Numerical Mathematics" (VM) since 1957, and "Computing Technics" (VT) since 1958. Until now two volumes of VMVT appeared with contributions of V.A.Ditkin, L.A.Lyusternik, A.I.Ivanova, A.A.Abramov, M.R. Shura-Bura, V.I.Shestakov, A.I.Vzorova, G.S.Khovanskiy, L.V. Bochek, Ye.N.Dekanosidze, L.N.Karamzina, V.K.Saul'yev, I.M. Stesin, M.A.Tomson, L.I.Gutenmakher, G.K.Kuz'minok, L.S.Klabukova. The published three volumes of VM contained contributions of L.A.Lyusternik, Yu.V.Vorob'yev, Ye.A.Volkov, V.K.Saul'yev, I.M.Stesin, A.I.Vzorova, Ya.I.Alikhashkin, G.S.Khovanskiy, S.P. Kapitsa, M.R.Shura-Bura, P.I.Chushkin, O.N.Katskova, Yu.D. Shmyglevskiy, V.S.Linskiy, M.G. Rappoport, B.M.Drozdov, A.G.Gesse, V.S.Vladimirov, L.S.Klabukova, A.I.Vzorova, I.M.Sobol', V.K. Kabulov, O.N.Belotserkovskiy. The first volume of VT contains contributions of O.K.Shcherbakov, F.V.Mayorov, P.P.Golovistikov, Ye.A.Volkov, L.N.Korolev, N.Ya. Matyukhin, O.V.Rosnitskiy, Yu.N. Glukhov, Ye.I.Mamonov.

Besides in 1958 Yu.Ya.Bazilevskiy edited the collected volume "Questions of the Theory of Mathematical Machines" ("Voprosy

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New Publications On Applied Analysis and Numerical Mathematics SOV/42-14-1-27/27

teorii matematicheskikh mashin") with contributions of Yu.Ya. Bazilevskiy, I.Ya.Akushskiy, Yu.A.Shreyder, E.A.Gluzberg, I.M. Vitenberg, B.I.Rameyev, V.S.Linskiy, L.A.Kozharskiy.

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SALEKHOV, G. S., CHUGUNOV, V. D., MUKHAMEDZYANOV, F. M. (Kazan')

"On the Applicability of Linear Programming for Solving Problems of Optimum Exploitation of Iol Reservoirs."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

MUKHAMETZYANOV, F.M.; SALEKHOV, G.S.; CHUGUNOV, V.D.

Using linear programming for solving certain problems of the efficient petroleum production. Izv. vys. ucheb. zav.; neft' i gaz 3 no.9:73-80 '60. (MIRA 14:4)

1. Kazanskiy gosudarstvennyy pedagogicheskiy institut, Kazanskiy filial AN SSSR.

(Oil field flooding)

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

DANILOV, V.L.; IVANOVA, A.N.; ISAKOVA, Ye.K.; LYUSTERNIK, L.A.; SALEKHOV, G.S.; KHOVANSKIY, A.N.; TSLAF, L.Ya.; YANPOL'SKIY, A.R., dots.; LAPKO, A.F., red.; KRYUCHKOVA, V.N., tekhn. red.

[Mathematical analysis; functions, limits, series, continued fractions] Matematicheskii analiz; funktsii, predely, riady, tsepnye drobi. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 439 p. (MIRA 14:8)

1. Chlen-korrespondent AN SSSR (for Lyusternik).
(Mathematical analysis)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001446820015-0

SALEKHOV, M.I.

Effect of tungsten-containing dust on the lungs of a white rat. Zdrav. Kazakh. 22 no.10:54-58 '62. (MIRA 17:5)

1. Iz Kazakhskogo instituta gigiyeny trudy i professional'nykh zabolevaniy Karaganda.

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