Problems in Mineralogy (Cont.)

METHODS OF INVESTIGATING ORES AND MINERALS

ECONOMICS OF RARE ELEMENTS

AVAILABLE: Library of Congress

Card 6/6

JA/dwm/mas
11-14-61

VOL'FSON, F.I.; LUKIN, L.I.; DYUKOV, A.I.; KUSHNAREV, I.P.; PEK, A.V.; RYBALOV, B.L.; SOKYUSHKIN, Ye.P.; KHOROSHILOV, L.V.; CHERNYSHEV, V.F.; BIRYUKOV, V.I.; GARMASH, A.A.; DRUZHININ, A.V.; KARAMYAN, K.A.; KUZNETSOV, K.F.; LOZOVSKIY, V.I.; MALINOVSKIY, Ye.P.; NEVSKIY, V.A.; PAVLOV, N.V.; RONENSON, B.M.; SAMONOV, I.Z.; SIDORENKO, A.V. [deceased]; SOPKO, P.F.; CHEGLOKOV, S.V.; YUDIN, B.A.; KREYTER, V.M., doktor geologo-mineral.nauk, retsenzent; KOTLYAR, V.N., doktor geologo-mineral.nauk, retsenzent; GRUSHEVOY, V.G., doktor geologo-mineral.nauk, retsenzent; NAKOVNIK, N.I., doktor geologo-mineral.nauk, retsenzent; KUREK, N.N., doktor geologo-mineral. nauk, retsenzent; LIOGEN'KIY, S.N., retsenzent; SHATALOV, Ye.T., doktor geologo-mineral.nauk, red.; KRISTAL'NYY, B.V., red.; SERGEYEVA, N.A., red.izd-va; GUROVA, O.A., tekhn.red.

[Basic problems and methods of studying structures of ore provinces

(Continued on next card)

VOL'FSON, F.I.---(continued) Card 2.
and deposits] Osnovnye voprosy i metody izucheniia struktur rudnykh polei i mestorozhdenii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1960. 623 p.
(MIRA 13:11)
1. Akademiya nauk SSSR. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii. 2. Moskovskiy institut tsvetnykh metallov i zolota (for Dyukov, Biryukov, Druzhinin, Kuznetsov). 3. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR (for Garmash). 4. Akademiya nauk Armyanskoy SSR (for Karamyan). 5. Baleyzoloto (for Sidorenko). 6. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR (for Malinovskiy, Nevskiy, Pavlov, Chernyshev). 7. Moskovskiy geologorazvedochnyy institut im. S.Ordzhonikidze (for Ronenson). 8. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya (for Samonov). 9. Voronezhskiy universitet (for Sopko). 10. Kol'skiy filial AN SSSR (for Yudin).
(Ore deposits)

GARMASH, A.A.

Characteristics of the distribution of rare elements in the Zolotushinskoye deposit. Krat. soob. IMGRE no.1:54-59 '60.
(MIRA 17:3)

ACCESSION NR: AT4028292 S/2677/63/000/010/0184/0200

AUTHOR: Garmash, A. A.; Vlasova, N. K.

TITLE: On the geochemistry of gallium in the formation process of pyrite-polymetallic ores

SOURCE: AN SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. Trudy*, No. 10, 1963, Redkiye elementy* v sul'fidny*kh mestorozhdeniyakh (rare earth elements in sulfide deposits) 184-200

TOPIC TAGS: gallium, polymetallic ores, pyrite ores, sphalerite, sulfide, chlorite, sericitization, pyrite, chalcopyrite, galenite

ABSTRACT: In this paper, the authors make an attempt to determine the origin and value of gallium. Their work concentrates primarily around the deposits of Rudny*y Altai, particularly at Zolotushinsk. The authors examine gallium in the surrounding rocks and chlorites and show the effect of seritization and quartzification. The results are presented in figures and tables. Gallium distribution in sulfide minerals, such as pyrite galenite chalcopyrite schalerite is also examined and presented in tables. Gallium is constantly present in the form of an impurity concentrated in sphalerite and alumosilicates in the pyrite-polymetal deposits of

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Rudny*y Altai. According to the authors, the basic mass of the "sulfide" gallium in the Zolotushinsk deposit is concentrated in the early generation of sphalerite of the polymetallic stage which was deposited by means of metasomatic substitution of intensely chloritorized, and consequently enriched, gallium of the surrounding rock formation. In conclusion, the authors state that later generation chlorites, including post-ore chlorite, differ substantially from the previous in their absolute gallium content and in the Ga:Al ratio. Geological and geochemical data together with comparative materials in other deposits at Rudny*y Altai make it possible to consider that the source of gallium concentrated in ores are rock formations from which gallium can be extracted during a prolonged metasomatic process of exchange and later depositing of sulfide ores serves as a gallium source concentrated in the ores. Orig. art. has: 5 figures and 8 tables.

ASSOCIATION: Institut minerologii, geokhimii i kristallokhimii redkikh elementov, AN SSSR (Institute of Mineralogy, Geochemistry and the Chemistry of Crystals).

SUBMITTED: 00 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: ML, EL NO REF SOV: 014 OTHER: 000

Card 2/2

ACCESSION NR: AT4028289 S/2677/63/000/010/0136/0157

AUTHOR: Garmash, A. A.; Kurbanova, N. Z.

TITLE: Selenium and tellurium in the ores of the Zolotushinskoye deposit (Rudny*y Altay)

SOURCE: AN SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. Trudy*, no. 10, 1963. Redkiye elementy* v sul'fidny*kh mestorozhdeniyakh (Rare-earth elements in sulfide deposits), 136-157

TOPIC TAGS: geology, ore deposit, mineralogy, mineral deposit, selenium, tellurium, rare element, mineral formation, geochemistry

ABSTRACT: In 1958-1960 a study was made of the peculiarities of distribution of rare elements in the iron pyrite-polymetallic deposits of the Zolotushinskaya ore-bearing zone, one of the typical polymetallic deposits of the Rudny*y Altay. The principal results incorporated in this paper are information on the distribution of selenium and tellurium in ore-forming minerals, the form in which these elements are found and a description of their geochemical behavior in the process of hypogene mineral formation. The article includes a description of the geological structure of the deposit; the mineral composition of the ores; paragenetic associations and the conditions under which they were formed; and the most likely

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circumstances under which these rare elements can be found. In this deposit the ores were formed in a prolonged process against a background of insignificant tectonic movements and without metamorphosis of the ores. The lead-copper-zinc ores containing Se and Te developed from a single hydrothermal solution. Before crystallization of galena the selenium and tellurium were concentrated in chalcopyrite and pyrite. There was a general tendency for Se and Te to accumulate in late paragenetic associations, crystallizing among chloritic rocks. Selenium is present as an isomorphic admixture in the crystal lattice of sulfides, not forming its own minerals. Different Te compounds are characteristic for different paragenetic associations. Bismuth and gold tellurides are most common in copper-zinc ores and silver and lead tellurides in lead-zinc ores. Orig. art. has: 6 tables and 6 figures.

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov (Institute of Mineralogy, Geochemistry and Crystallochemistry of Rare Elements)

SUBMITTED: 00 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: AS, EL NO REF SOV: 016 OTHER: 001

Card 2/2

BELOUS, L.Kh., st. nauchn. sotr.; KAZANSKIY, Yu.P.; VDOVIN, V.V.; KLYAROVSKIY, V.M.; KUZNETSOV, V.P.; NIKOLAYEVA, I.V.; NOVOZHILOV, V.I.; SENDERZON, E.M.; AKAYEV, M.S.; BABIN, A.A.; BERDNIKOV, A.F.; GORYUKHIN, Ye.Ya.; NAGORSKIY, M.P.; PIVEN', N.M.; BAKANOV, G.Ye.; GEBLER, I.V.; SMOLYANINOV, N.M.; SMOLYANINOVA, S.I.; YUSHIN, V.I.; D'YAKONOVA, N.D.; REZAPOV, N.M.; KASHTANOV, V.A.; GOL'BERT, A.V.; SIDOROV, A.P.; GARNASH, A.A.; BYKOV, M.S.; BORODIN, L.V.; AYCHKOV, L.F.; KUCHIN, M.I.; SHAKHOV, F.N., glav. red.; SHPAKOVSKAYA, L.I., red.

[West Siberian iron ore basin] Zapadno-Sibirskii zhelezorudnyi bassein. Novosibirsk, Red.-izd. otdel Sibirskogo otdniia AN SSSR, 1964. 447 p. (MIRA 17:12)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. 2. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR (for Belous, Kazanskiy, Vdovin, Klyarovskiy, Kuznetsov, Nikolayeva, Novozhilov, Senderzon). 3. Institut gornogo dela (for Akayev). 4. Novosibirskoye geologicheskoye upravleniye Ministerstva geologii i okhrany nedr SSSR (for Babin, Berdnikov, Goryukhin, Nagorskiy, Piven').

(Continued on next card)

BELOUS, N.Kh.---(continued) Card 2.

Tomskiy politekhnicheskiy institut (for Bakanov, Gelber, Smolyaninov, Smolyaninova). 5. Sibirskiy nauchno-issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya(for Yushin, D'yakonova, Rezapov, Kashtanov, Gol'bort). 6. Institut ekonomiki gel'skogo khozyaystva (for Garmash). 7. Sibirskiy metallurgicheskiy institut (for Bykov, Borodin, Ryabkov). 8. Tomskiy inzhenerno-stroitel'nyy institut (for Kuchin). 9. Chlen-korrespondent AN SSSR (for Shakhov).

GARMASH, A.A.

Solder for correcting casting defects. Mashinostroitel' no.12: 18 D '65. (MIRA 18:12)

GARMASH, D.

First steps of the Rybnoye Repair and Supply Station. Nauka i pered. op. v sel'khoz. 8 no.11:26-29 N '58. (MIRA 11:12)

1. Direktor Rybnovskoy remontno-tekhnicheskoy stantsii, Ryazanskaya oblast'.
(Rybnoye District--Repair and supply stations)

GARMASH, D.

Right way. Rabotnitsa 36 no.4:7 Ap '58. (MIRA 11:4)

1.Direktor Rybnovskoy mashinno-traktornoy stantsii.
(Agricultural policy)

KULISHENKO, A.Z.; KHARITONOV, A.S.; KUZ'MENKO, A.S.; GARMASH, G.K.

Determination of the viscosity of magnetite in suspension by measuring its magnetic permeability in conjunction with a radioactive densitometer. Koks i khim. no.2:13-15 '60.
(MIRA 13:5)

1. Ukrainskiy uglekhimicheskiy institut(for Kulishenko, Kharitonov). 2. Yasinovskiy koksokhimicheskiy zavod(for Kuz'-menko, Garmash).
(Yasinovka--Coal preparation) (Magnetite)

GARMASH, G.K.; GRIDIN, I.R.; KULISHENKO, A.Z.; KHARITONOV, A.S.

Magnetic density relay. Zav.lab. 29 no.2:241-242 '63.
(MIRA 16:5)

(Electric relays) (Automatic control) (Suspensions (Chemistry))

GARMASH, G.S.

Hydration of sunflower seed oil. Masl.-zhir.prom. 19 no.6:28-29 '54. (MLRA 7:10)

1. TsNIL "Ukrglavrazzhirmaslo"
(Sunflower seed oil)

GARMASH, I. I., inzh.; GOMBERA, A. Ya., inzh.; PAVLENKO, I. I., inzh.

Mechanized painting of ingot molds and cores. Mekh.i avtom. proizv. 18 no. 5:26-27 My '64. (MIRA 17:5)

RUSAKOV, G.K., kand. sel'khoz. nauk; MILYAVSKIY, I.O., kand. sel'khoz. nauk; SHILKO, V.P., kand. sel'khoz. nauk; MARTINENAS, A.N.; BELINSKIY, A.I., agr.-ekonom.; KARPUSHENKO, A.I., agr.-ekon. [deceased]; POSMITNYY, V.M., ekonom.; PANCHENKO, Ya.I., agr.-ekonom.; KVACHEV, V.M., agr.-ekonom.; SOBOLENKO, V.S.; KRAVTSOV, D.S., agronom.; LYSOV, V.F., ekonom.; SHLYAKHTIN, V.I., kand. ekon. nauk; TSYBUL'KO, F.Ye.; ORIKHOVSKIY, I.G., agr.-ekonom.; TATUREVICH, N.M., agr.-ekonom.; GAMASH, I.I.; NOSACHENKO, V.F., inzh.-ekonom.; MUKHTASULLIN, Sh.M., agr.-ekonom.; ROZENTSVAYG, A.L., agr.-ekonom.; BERLIN, M.Z., dots.; IVANOV, K.I., agr.-ekonom.; SILIN, A.G., ekonom.; LIKHOT, I.K.; CHANOV, G.I., kand. ekon. nauk; MIKHAYLOV, M.V., kand. ekon. nauk; GORELIK, L.Ya., red.

[Planning and economical operation on collective farms] Planirovanie i rezhim ekonomii v kolkhozakh. Moskva, Ekonomika, 1965. 258 p. (MIRA 18:5)

1. Zaveduyushchiy otdelom ekonomiki i organizatsii kolkhoznogo proizvodstva Nauchno-issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva Litovskoy SSR (for Martinenas). 2. Zaveduyushchiy otdelom Stavropol'skogo krayevogo komiteta KPSS (for Likhot).

ACCESSION NR: AR4039333 S/0277/64/000/003/0007/0007

SOURCE: Ref. zh. Mashinostr. mat. konstr. i raschet detal. mash. Otd. vy*p., Abs. 3.48.48

AUTHOR: Garmash, L. I.; Lifshits, A. Ye.; Ty*mchak, V. M.

TITLE: Heat resistant and refractory steels used in building furnaces

CITED SOURCE: Sb. tr. Gos. soyuzn. in-t po proyektir. agregatov stalaliteyn. i prokatn. proiz-va dlya chern. metallurgii Stal'proyekt, vy*p. 4, 1963, 87-103

TOPIC TAGS: steel, heat-resistant steel, refractory steel, furnace structure, furnace building, heat resistance, stress resistance

TRANSLATION: Listings of heat resistant and refractory steels for work under temperatures of 600-1,200 degrees Centigrade are given. Characteristics of momentary and long-range heat resistance of these steels are given along with recommendations on the selection of permissible stress and on the use of steels in furnace designs.

DATE ACQ: 22Apr64 SUB CODE: HM ENCL: 00

Card 1/1

GARMASH L. M.

USSR/Physiology of Plants. Mineral Nutrition I-2

Abs Jour : Ref Zhur-Biologiya, No 2, 1958, 5633

Author : M. A. Kurakhtanov and L. M. Garmash

Inst : Moscow Agricultural Academy imeni K. A. Timiryazev

Title : Effect of Ammonium and Nitrate Nitrogen on Phosphorus Nutrition of Oats and Barley Plants

Orig Pub : Dokl. Mosk. s-kh. akad. in K. A. Timiryazeva, 1956, vyp. 22, 332-339

Abstract : Nitrogen fertilizers on a base of different doses of P were introduced into water cultures containing the Gel'rigel's nutritive mixture. Plants containing N from an ammonium source were found to have absorbed relatively more P than those with N from a nitrate source. With an ammonium source of N as compared with a nitrate

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USSR/Physiology of Plants. Mineral Nutrition I-2

Abs Jour : Ref Zhur-Biologiya, No 2, 1958, 5633

Abstract : source, increased doses of P had a negative effect on the yields of oats and barley, while small doses had a negative effect on the yields of oats, but had no effect at all on the yields of barley. Large doses of K somewhat weakened the negative effect of ammonium N on the growth of the plant. A rise in the level of phosphate nutrition with an increase in mineral phosphorus caused a rise in the content of organophosphorus compounds in the plants, particularly of nucleoproteides, phytin, and sugar phosphates.

Card 2/2

ASAROV, Kh.K., kand. sel'skokh. nauk, dotsent; GARMASH, L.M., starshiy laborant

Forms of phosphorus compounds in lupine as related to the method of the placement of lime and phosphorite meal in the soil. Izv. TSKHA no.1:50-60 '63. (MIRA 16:7)

(Lupine—Fertilizers and manures)
(Plants, Effect of phosphorus on)

GARMASH, L.M.

654

AUTHORS: Garmash, L. M., Morozova, A.M. and Yanskaya, M.S., Engineers.

TITLE: Magnico type alloys with a reduced cobalt content. (Splavy tipa magniko s ponizhennym soderzhaniem kobal'ta).

PERIODICAL: "Metallovedenie i Obrabotka Metallov" (Metallurgy and Metal Treatment), 1957, No.6, pp.8-10 (U.S.S.R.)

ABSTRACT: Magnico type alloys contain 24% of the scarce and expensive cobalt. Attempts so far to substitute cobalt by any other element have not been successful. The main aim of the present investigations was to establish the possibility of reducing the cobalt in magnico type alloys whilst maintaining the high maximum magnetic energy, residual induction and coersive force. The investigated alloys contained various percentages of cobalt and were made from two series of melts containing 15 and 14% Ni respectively. The chemical compositions of the (12) melts are given in Table 1, p.10. The specimens were produced in 5 kg crucibles inside high frequency induction furnaces using as raw materials Armco iron with 0.03-0.04 C, K2M cobalt, electrolytic nickel and copper and A00 aluminium. It was found that if the cobalt is reduced from 24 to 21-22% it does not involve any loss in the magnetic characteristics and

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Magnico type alloys with a reduced cobalt content. (Cont.)

does not necessitate use of higher magnetic fields during the thermomagnetic treatment. The magnetic properties of the specimens after thermomagnetic treatment inside fields of various magnetic potentials in the case of tempering for four hours at 580 C are given in Table 2, p.10. Fig.2 gives the dependence on the cobalt content of magnico type alloys containing 15% Ni, whilst Fig.3 gives the same dependence for alloys containing 14% Ni. 3 figures, 2 tables, no references.

AVAILABLE:

Card 2/2

KAGAN, Iosif Zakharovich; MININ, M.N., red.; GARMASH, L.M., otv.za vypusk; SUKHAREVA, R.A., tekhn.red.

[Introduction of electric slag welding; "Penzkhimmash" Plant of the Penza Economic Council] Opyt vnedreniia elektroshlakovoi svarki; zavod "Penzkhimmash" Penzenskogo sovnarkhoza. Moskva, 1958. 16 p. (Moskovskii dom nauchno-tekhnicheskoi propagandy. Peredovoi opyt proizvodstva. Seriia: Tekhnologiia mashinostroeniia, no.30. Svarka, paika i metallizatsiia).

(MIRA 13:10)

(Penza Province--Electric welding)

GARMASH, L. M

ORLOV, G.M.; LESHCHENKO, V.L.; UTEMISOV, U.B.; MAZUROV, V.I.; IGNATOVA, K.F.; KONSTANTINOV, L.S.,red.; GARMASH, L.M., otv. za vypusk; SUKHAREVA, R.A., tekhn.red.

[Making foundry molds in dies under high pressure] Izgotovlenie liteinykh form pressovaniem pod bol'shim davleniem. Moskva, Mosk. dom nauchno-tekhn.propagandy im. F.E.Dzerzhinskogo, 1958. 28 p. (Peredovoi opyt proizvodstva. Ser."Tekhnologiia mashinostroeniia," no.31. Liteinoe proizvodstvo). (MIRA 13:1)
(Die casting--Equipment and supplies)

GARMASH, L. M

POPLAVKO, Mikhail Vasil'yevich; MANUYLOV, Nikolay Nikolayevich; GRUZDEVA, Larisa Alekseyevna; ZVEGINTSEVA, K.V., red.; GARMASH, L.M., otv. za vypusk; SUKHAREVA, R.A., tekhn.red.

[Welding of titanium] Svarka titana. Moskva, Mosk.dom nauchno-tekhn.propagandy im.F.E.Dzerzhinskogo, 1958. 37 p. (Peredovoi opyt proizvodstva. Ser."Tekhnologiia mashinostroeniia," no.29. Svarka, paika i metallizatsiia) (MIRA 13:1)
(Titanium--Welding)

BALABANOV, Artemiy Melent'yevich; BARANOV, M.S., red.; GARMASH, L.M., otv. za vypusk; SUKHAREVA, R.A., tekhn.red.

[Built-up welding with a weaving arc] Vidrodugovaia naplavka. Moskva, 1959. 31 p. (Moskovskii dom nauchno-tekhnicheskoi propagandy. Peredovoi opyt proizvodstva. Seriia: Progressivnaia tekhnologiia mashinostroeniia, vyp. 2). (MIRA 13:9)
(Electric welding)
(Machinery--Maintenance and repair)

BRODSKIY, A.Ya., red.; GARMASH, L.M., otv. za vypusk; SUKHAREVA, R.A., tekhn.red.

[Welding of stainless steel and heat-resistant alloys] Paika nerzhaveiushchikh stalei i zharoprochnykh splavov. Moskva, 1959. 51 p. (Moskovskii Dom nauchno-tekhnicheskoi propagandy. Peredovoi opyt proizvodstva. Seriia: Progressivnaia tekhnologiia mashinostroeniia, vyp. 18). (MIRA 14:1)
(Steel, Stainless--Welding)
(Heat-resistant alloys--Welding)

IVANOV, Valentin Nikolayevich; BAZILEV, N.P., red.; GARMASH, L.M., otv. za vypusk; SUKHAREVA, R.A., tekhn.red.

[High precision casting in removable ceramic molds] Lit'e povyshennoi tochnosti v raz"emnye keramicheskie formy. Moskva, 1959. 57 p. (Moskovskii dom nauchno-tekhnicheskoi propagandy. Peredovoi opyt proizvodstva. Seriia: Progressivnaia tekhnologiia mashinostroeniia, vyp. 6). (MIRA 13:9)
(Precision casting)

IGNATENKO, Yu.F., red.; GARMASH, L.M., otv. za vypusk; SUKHAREVA, R.A., tekhn.red.

[New technological processes and recommendations on the design of molds for precision casting] Novye tekhnologicheskie protsessy i rekomendatsii po konstruirovaniiu form pri proizvodstve tochnogo lit'ia. Moskva, 1959. 74 p. (Moskovskii dom nauchno-tekhnicheskoi propagandy. Peredovoi opyt proizvodstva. Seriia: Progressivnaia tekhnologiia mashinostroeniia, vyp. 14/15). (MIRA 14:1)

(Molding (Founding)) (Precision casting)

ASAROV, Kh.K., kand. sel'skokhoz. nauk, dotsent; LI YEN SEK, aspirant; GARMASH, L.M., starshiy laborant

Combined use of lime and phosphorite in gorwing perennial lupine on acid soils. Izv. TSKhA no.6:110-126 '61. (MIRA 16:8)

(Lupine--Fertilizers and manures)
(Phosphates) (Liming of soils)

ASAROV, Kh.K., kand. sel'skokhoz. nauk, dotsent; GARMASH, L.M., starshiy laborant

Effectiveness of the placement of lime and phosphate meal in layers for alkaloid bearing and alkaloidless perennial lupine. Izv. TSKHA no.4:111-122 '63. (MIRA 17:1)

PATSKEVICH, Ivan Romanovich; BEREZKIN, P.N., dotsent, retsenzent; GARMASH, L.Ye., inzh., retsenzent; FROLOV, B.L., inzh., red.; DUGINA, N.A., tekhn.red.

["Vibration-arc" built-up welding] Vibrodugovaia naplavka. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1958. (MIRA 12:5)
(Electric welding)

GARMASH, M.Z. [Harmash, M.Z.]

Development of Soviet walking excavators. Mar.z ist.tekh. no.5:74-81 '59. (MIRA 13:5)
(Excavating machinery)

KOVSHULYA, O.A.; GARMASH, M.Z. [HARMASH, M.Z.]; ZIL'BAN, M.S.

[Russian-Ukrainian mining dictionary] Rosiis'ko-ukrains'kyi hirnychyi slovnyk. 20000 terminiv. Kyiv, Vyd-vo Akad.nauk URSR, 1959. 271 p. (MIRA 14:4)
(Russian language--Dictionaries--Ukrainian)
(Mining engineering--Dictionaries)

GARMASH, N., kand. tekhn. nauk

Problems in the theory and calculation of pneumatic conveying at Re $\geqslant$ 1000. Muk.-elev. prom. 29 no.7:18-23 Jl '63. (MIRA 17:1)

1. Zaporozhskiy mashinostroitel'nyy institut im. V.Ya. Chubarya.

GARMASH, N.T., kandidat tekhnicheskikh nauk.

Theoretical principles of one of the methods for sieveless separation of grain tailings. Sel'khozmashina no.12:4-9 D '56. (MLRA 10:2)

(Grain--Cleaning)

GARMASH, N.T., dotsent

Secondary loss factor in calculating pneumatic conveying processes. Izv.vys. ucheb. zav.; mashinostr. no. 12:97-107 '63. (MIRA 17:9)

1. Zaporozhskiy mashinostroitel'nyy institut.

GARMASH, N.T., kand. tekhn. nauk, dotsent

Rated formulas for determining losses in flow pressure in conveying granular and powdered materials. Izv.vys.ucheb.zav.; mashinostr. no.4: 107-123 '64. (MIRA 18:1)

1. Zaporozhskiy mashinostroitel'nyy institut imeni V.Ya.Chubarya.

GARMASH, N.Z.

GARMASH, N. Z.

"Investigation of the Operation of Walking Excavators in the Construction Industry." Cand Tech Sci, Kiev Construction Engineering Inst, Min of Higher Education USSR, Kiev, 1954. (KL, No 8, Feb 55)

SO: Sum. No. 631, 26 Aug 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

GARMASH, N. Z.

FIDELEV, Aleksandr Savel'yevich; GARMASH, Nikolay Zakharovich; TURENKO, Aleksandr Nikolayevich; KUCHEROV, P.S., otvetstvennyy redaktor; ZIL'BAM, M.S., redaktor izdatel'stva; ZHUKOVSKIY, A.D., tekhnicheskiy redaktor

[Research in excavating machinery] Issledovanie raboty zemleroinykh mashin. Kiev, Izd-vo Akademii nauk USSR, 1956. 65 p. (MLRA 9:12)

1. Chlen-korrespondent AN USSR (for Kucherov)
(Excavating machinery)

GARMASH, N.Z.

Calculation of nontransport diagrams of the walking excavator by the three-dimensional method. Dop. AN URSR no.2:149-152 '57. (MLRA 10:5)

1. Institut girnichoi spravi AN URSR. Predstaviv akademik AN URSR M.A. Starikov.
(Mining machinery)

KUCHEROV, P.S., otv.red.; STARIKOV, N.A., akademik, red.; PEN'KOV, A.M., red.; KUKHTENKO, A.I., doktor tekhn.nauk, red.; KOVSHULYA, A.A., kand.tekhn.nauk, red.; GARMASH, N.Z., kand.tekhn.nauk, red.; KISINA, I.V., red.izd-va; YURCHISHIN, V.I., tekhn.red.

[Tapping and working mineral deposits] Voprosy vskrytiia i razrabotki mestorozhdenii poleznykh iskopaemykh. Kiev, 1958. 172 p. (MIRA 12:6)

1. Akademiya nauk USSR, Kiyev. Institut gornogo dela. 2. Chlen-korrespondent AN USSR (for Kucherov, Pen'kov). 3. AN USSR (for Starikov).

(Mining engineering)

GARMASH, N.Z. [Harmash, M.Z.]

Conditions for excavating the maximum volume of soil by walking excavators. Dop. AN URSR no.6:636-638 '58. (MIRA 11:9)

1.Institut gornogo dela AN USSR. Predstavil akademik AN USSR N.A. Starikov [M.A. Starikov].
(Excavation)

GARMASH, Nikolay Zakharovich [Harmash, M.Z.]; KUCHEROV, P.S., otv.red.; SHKURKO, V.A., red.izd-va; MATVIYCHUK, O.O., tekhn.red.

[Using walking excavators in earthwork operations] Utvorennia vyimok krokuiuchymy ekskavatoramy. Kyiv, Vyd-vo Akad.nauk URSR, 1959, 140 p. (MIRA 13:2)

1. Chlen-korrespondent AN USSR (for Kucherov).
(Excavating machinery)

KOVSHULYA, A.A. [Kovshulia, O.A.]; GARMASH, N.Z. [Harmash, M.Z.]; ZIL'BAN, M.S.; KUCHEROV, P.S., otv.red.; BURYACHOK, A.A., kand.filolog.nauk, red.-leksikograf; SHTUL'MAN, I.F., red. izd-va; BUNIY, R.O., tekhn.red.

[Russian-Ukrainian mining dictionary] Russko-ukrainskii gornyi slovar'. 20000 terminov. Sost.A.A.Kovshulia, N.Z.Garmash i M.S. Zil'ban. Kyiv, 1959. 271 p. (MIRA 13:3)

1. Akademiya nauk USSR, Kiyev. 2. Chlen-korrespondent AN USSR (for Kucherov).
(Russian language--Dictionaries--Ukrainian)
(Mining engineering--Dictionaries)

GARMASH, N.Z.

Best procedure for digging trenches with walker excavators. Sbor. trud.Inst.gor.dela AN URSR no.5:69-78 '58. (MIRA 15:5)
(Excavating machinery) (Strip mining)

GARMASH, N.Z.

[Reducing the operating cycle of walking excavators] Sposoby sokrashcheniia rabochego tsikla shagaiushchikh ekskavatorov. Kiev, Akad.nauk USSR, 1959. 7 p.

(MIRA 14:2)

(Excavating machinery)

GARMASH, N.Z., kand.tekhn.nauk

Idea of the capacity of excavators. Sbor. trud. Inst. gor. dela AN URSR no.12:172-176 '61. (MIRA 15:11)
(Excavating machinery)

GARMASH, N.Z., kand.tekhn.nauk

Actuating mechanism of a rotary excavator for the fracturing of hard rock. Met. i gornorud. prom. no.2:54-55 Mr-Ap '62. (MIRA 15:11)

1. Donetskiy filial komissii AN UkrSSR po istorii tekhniki.
(Excavating machinery)

GARMASH, N.Z., kand.tekhn.nauk; SHEVCHENKO, I.Ya., inzh.

Creation of rock dumps at coal preparation plants of the Donets Economic Council. Ugol'. prom. no.6:36-39 N-D '62. (MIRA 16:2)

1. Institut gornogo dela AN UkrSSR.
(Donets Province—Coal preparation)

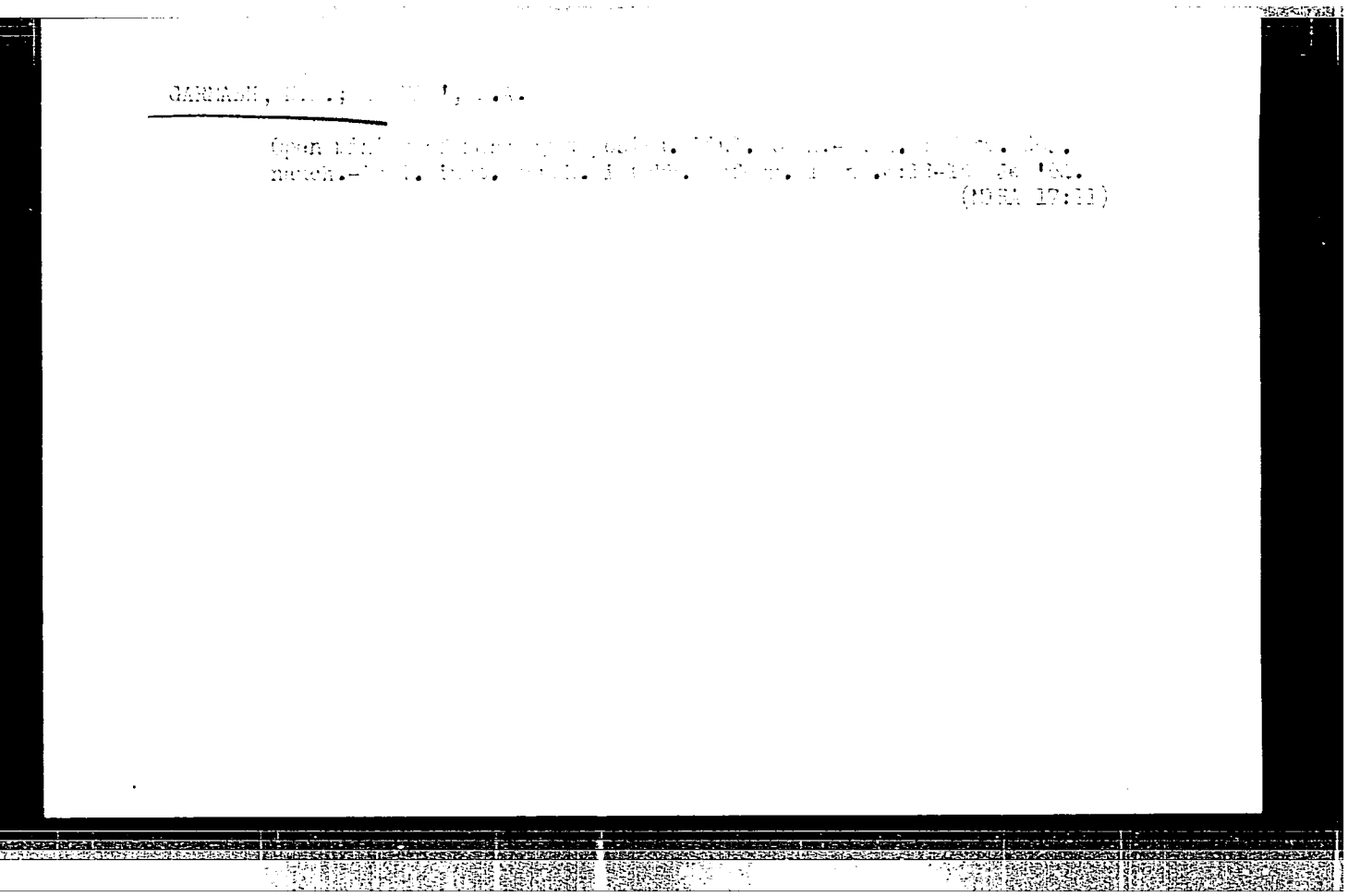
GARMASH, N.Z., kand. tekhn. nauk

Conference on the improvement of the quarrying for nonmetallic minerals. Met. i gornorud. prom. no.6:80-81 N-D '62.
(MIRA 17:8)

GARMASH, N.Z.; PASTUKHOV, A.P.

Use of noncontinuous machines in the Yelenovka flux limestone quarries. Trudy Inst.gor.dela AN URSR no.11:95-100 '62. (MIRA 16:2)

(Yelenovka region (Donetsk Province)—
Quarries and quarrying—Equipment and supplies)



(MSA 17:11)

ANIKEYEV, A.V., inzh.; GARMASH, N.Z., kand. tekhn. nauk; BULAVKIN, I.I., gornyy inzh.

Using conveyors for hauling overburden rock. Gor. zhur. no.2:22-24 F '65. (MIRA 18:4)

1. Nauchno-issledovatel'skiy gornorudnyy institut, Donetskoye otdeleniye. 2. Karakubskoye rudoupravleniye (for Anikeyev).

GARMASH, N.Z., kand.tekhn.nauk

An efficient planning of the work of excavating machinery in the flowsheet of mining operations without haulage. Gor.zhur. no.8:12-15 Ag '65. (MIRA 18:10)

1. Nauchno-issledovatel'skiy gornorudnyy institut, Krivoy Rog.

[redacted], N.A.; [redacted], Yu.I.

[redacted] to the ground of ride on walking excavators and [redacted] special equipment. Gneuppery 39 no.5:29-32 '65.

(MIRA 18:5)

1. Nauchno-issledovatel'skiy gornorudnyy institut.

GARMASH, N.Z., kand.tekhn.nauk; PIRICH, E.I.

Secondary crushing operations in flux-limestone quarries of the Karakub mine administration. Biul.tekh.-ekon.inform. Gos.nauch.-issl.inst.nauch.i tekh.inform. no.8:6-7 Ag '65. (MIRA 18:12)

PASHKOV, Valentin Ivanovich; GARMASH, P., red.; ISUPOVA, N., tekhn. red.

[For the "city of communist labor"]Za gorod kommunisticheskogo truda. Simferopol', Krymizdat, 1962. 84 p. (MIRA 15:11)

1. Sekretar' Sevastopol'skogo gorodskogo komiteta Kommunisticheskoy partiy Ukrainy (for Pashkov).
(Sevastopol--Politics and government)

TOMILIN, Valentin Konstantinovich; GARMASH, P., red.; FISENKO, A., tekhn. red.

[Let us introduce new and progressive methods] Novoe, peredovoe - v zhizn'. Simferopol', Krymizdat, 1962. 22 p. (MIRA 15:11)

1. Sekretar' partiynogo byuro partiynoy organizatsii vagonnogo depo stantsii Simferopol' (for Tomilin).
(Simferopol'--Railroads)

KHOMENKO, V.A.; KOROBITSIN, V.G., nauchn. sotr.; GARMASH, P.Ye., red.;

[Nikita State Botanical Garden] Nikitskii botanicheskii sad; marshrut ekskursii. Simferopol', Krymizdat, 1963. (MIRA 16:12)

1. Yalta. Gosudarstvennyy Nikitskiy botanicheskiy sad.
2. Nikitskiy botanicheskiy sad, Yalta (for Korobitsin).
(Nikita (Crimea))—Botanical gardens)

ANDRUSHCHENKO, A.G.; BEREZKINA, O.A.; KUZ'MINA, V.I.; OZEROVA, G.M.; PAL'CHIKOVA, A.P.; TSARIN, A.P.; TIMOFEYEV, L.N.; NIKITIN, G.A., krayeved; GARMASH, P.Ye., red.; FISENKO, A.T., tekhn. red.

[Alupka; an excursion sketch; its nature, history, sanatoriums, the palace-museum, its park, and an information directory] Alupka; ekskursionnyi ocherk: priroda, istoriia, zdravnitsy, dvorets-muzei, park, spravochnye svedeniia. Simferepol', Krymizdat, 1963. 78 p. (MIRA 16:10)

1. Nauchnyye sotrudniki Alupkinskogo dvortsa - muzeya (for all except Fisenko, Garmash).
(Alupka--Guidebooks)

DOTSENKO, A.P., kand. sel'khoz. nauk; TKACHENKO, A.A.; DOSTIN, Yu.V.; YURGENSON, Ye.I., kand. sel'khoz. nauk; YABLONSKIY, L.I.; GARMASH, P., red.

[Forest reserves of the Crimea] V zapovednykh lesakh Kryma. Simferopol', Krymizdat, 1963. 1 v. (MIRA 17:6)

KONOV, V., inzh.; SAKHAROV, S., inzh.; SUBBOTIN, I., inzh.; CHEREMNYKH, Y[illegible], inzh.; KARYAKO, B., inzh.; RASSHCHEPKIN, V., inzh.; BORISOVA, T., inzh.; PEREPELITSYN, E., inzh.; GARMASH, V., inzh.; GOLOVINA, V., inzh.

New developments in building practice. Na stroi. Ros. 4 no.1:7,11,14,18, 26,30 Ja '63. (MIRA 16:3)
(Building—Technological innovations)

GARMASH, V. A.

USSR/Electricity -- Communications FD-2634

Card 1/1 : Pub. 41-20/21

Author : Garmash, V. A.

Title : Seminar of the laboratory for the development of scientific problems of wire communications of the Academy of Sciences USSR

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 4, 158-159, Apr 1955

Abstract : Presents short summaries of reports submitted to the seminar held by the subject laboratory. Subjects covered include: the theory of the diffusion of electromagnetic energy along communication lines, investigation of methods for automatizing inter-city telephone networks, investigation of methods for joining telephone stations, correction of distortions in photo-telegraphic signals, etc.

Institution :

Submitted :

GARMASH, V.A.

Quantization of signals having uneven pulse spacing. Elektrosviaz' 11 no.10:11-13 O '57. (MIRA 10:10)
(Telecommunication)

GARMASH V A.

AUTHOR: GALITSKAYA,E.I., GARMASH,V.A., LEBEDEV,D.S. PA - 2824

TITLE: The Analytical Computers for the Statistical Analysis of Television Communications. (Primeneniye schetno - analiticheskikh mashin dlya statisticheskogo analiza televizionnykh soobshcheniye Russian)

PERIODICAL: Radiotekhnika, 1957, Vol 12, Nr 3, pp 53 - 56 (U.S.S.R.)
Received: 5 / 1957 Reviewed: 6 / 1957

ABSTRACT: Work in the case of the statistical analysis of an image is divided into two parts: The quantization and writing down of the values of the brightness coefficient of some elements on an intermediate member as which the standard telegraphy perforated band is used, the transmission of data from the perforated band to the perforated cards and evaluation of cards by means of analytic computers. A block scheme, which had been developed by one of the authors, is described. This serves for writing down the values of the brightness coefficient of the image elements. The possibility is shown how to obtain multidimensional functions of the probability of a distribution of brightness graduation of a television communication by means of analytical computers. As communication, sections of cinema films were used. A onedimensional function for the distribution of probability, a correlation function, and the entropy value computed according to a twodimensional function of the probability distribution are shown for two images. The method of investigation

Card 1/2

Garmash, V.A.

INFORMATION THEORY TELEGRAPHY

"Possibility of Increasing the Speed of Transmission of Telegraph Messages", by D.S. Lebedev and V.A. Garmash, Elektrosvyaz', No 1, January 1958, pp 68-69.

The possibility of increasing the speed of transmission of telegraph messages is examined, using the statistics of three-latter combinations as found in the Russian language.

Reference is made to Shannon's "Prediction and Entropy of Printed English" Bell System Technical Journal, Vol 30, No 1, 1951.

Card 1/1

SOV/106-58-9-1/17

AUTHORS: Garmash, V.A., and Kirillov, N.Ye.

TITLE: The Coding of a Sequence of Two Independent Symbols (Kodirovaniye posledovatel'nosti iz dvukh nezavisimykh simvolov)

PERIODICAL: Elektrosvyaz', 1958, Nr 9, pp 3-6 (USSR)

ABSTRACT: The general problem is of interest in "bipolar" signalling, e.g. in sending black-and-white pictures. Effective coding requires that the sequence be grouped N symbols at a time, and Table 1 shows the effect of sending such groups by Shannon-Fano coding (Ref 1). It will be seen that the method is only useful when N is greater than 10. The technology needed to do this is complicated and a large code book is required. A method suggested by Shannon (Ref 1) can be carried out rather simply and does not need a large storage capacity. By dividing the sequence in Fig 1 consisting of symbols 0 and 1 into groups of k + 1 symbols, starting with the symbol 1 and consisting further of a sequence of k zeros up to the next 1 symbol. Unity is indicated by a combination of m binary symbols. The number k is represented in binary notation but excludes

Card 1/3

The Coding of a Sequence of Two Independent Symbols

that denoting unity. The effectiveness of the coding is given by (1) where p is the probability of occurrence of a zero, H is the entropy of the coded sequence, $\bar{k}$ is the mean length of a group, $\bar{L}$ is the mean number of binary symbols in the coded group. H is given by (2). The probability distribution, according to Ref 3 is (3), the mean length $\bar{k}$ is (4) and $\bar{L}$ is (5). Using (3) and the expression for the sum of a finite number of terms in a geometric progression (1) becomes (7). Numerical values of effectiveness are given in Table 2 against p and m. For m equal to 2, 3 and 4 the effectiveness is greater than 0.83 for p between 0.5 and 0.99. Elias (Ref 2) has put forward another method of coding and the corresponding lower limit to the effectiveness is 0.79. The rather higher effectiveness of the Shannon's method is explained by the use of a rather shorter mean coded length. Figs 3 and 4 are code trees for the two methods. Shannon's method

requires 34 binary symbols, Elias's, 42. The author thanks Corresponding Member of the Academy of Sciences, A.A. Kharkevich and Professor E.L. Blokh for advice and assistance.

There are 4 figures, 2 tables and 3 references, two of which are Soviet.

SUBMITTED: March 31, 1958

GARMASH, V. A.: Master Tech Sci (diss) -- "Investigation of the statistics of signals and messages and methods of statistical coding". Moscow, 1959. 8 pp (Min Communications USSR, Moscow Electrical Engineering Inst of Communications), 150 copies (KL, No 15, 1959, 116)

GARMASH, V.A.; KIRILLOV, N.Ye.

Experimental investigation of the statistics of facsimile communications. Nauch.-dokl.vys.shkoly; radiotekh.i elektron. no.1: 37-42 '59. (MIRA 12:10)

1. Laboratoriya po razrabotke nauchnykh problem provodnoy svyazi AN SSSR.
(Facsimile transmission)

GARMASH, V.A.

6(0) PHASE I BOOK EXPLOITATION SOV/2792

Akademiya nauk SSSR. Laboratoriya sistem peredachi informatsii

Problemy peredachi informatsii, VYP. 2 (Problems of Information Transfer, Nr. 2) Moscow, Izd-vo AN SSSR, 1959. 99 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: Ye.K. Vinichenko; Tech. Ed.: Yu. Kylina; Editorial Board: A.A. Kharkevich (Resp. Ed.), V.N. Kazanskiy, I.A. Ovseyevich, V.N. Roginskiy, and V.D. Solomonov.

PURPOSE: This collection of articles may be useful to engineers engaged in the design of wire communication systems.

COVERAGE: The authors discuss the theory of transmission of information and describe methods used in transmission. They consider attenuation of a two-wire line and cable impedance and discuss problems of coding, decoding and predicting communication signals. They also consider statistical analysis of information and discuss systems used. No personalities are mentioned.

Sinay, Ya.G. The Least Error and the Best Method of Transmitting Stationary Information With Linear Coding and Decoding for the Case of Gaussian Communication Channels 10

The author derives a functional expressing the mean-square error of transmission and obtains the best method of transmitting information, with linear coding and decoding, by gaussian communication channels. There are 3 references, all Soviet (including 1 translation).

Kazaryan, K.A. Some Problem of Prediction of Communication Signals 19

The author discusses problems of constructing circuits for signal prediction and analyses their operation under near-actual operating conditions. He also presents an example of extrapolating a speech signal. There are 11 references: 6 Soviet (including 1 translation) and 5 English.

Meshkovskiy, K.A. Some Problems of the Theory of Coding 57

The author discusses the principle of constructing, analyzing and comparing of codes. There are 5 references: 3 Soviet and 2 English.

Garmash, V.A. Methods of Using Punched-card Computing Machines for Statistical Information Analysis 65

The author shows the advantage of punched-card computing machines over other types of computers for statistical analysis of information. He also discusses methods of using these machines. There are 3 references, all Soviet.

Labedev, D.S. Device for Printing Images on Punched Tape 73

The author describes a device for printing images on punched tape. The device is used in the study of statistics of television information. It converts a continuous signal obtained in scanning a motion picture into a sequence of binary numbers. There are 2 references, both Soviet.

Labedev, D.S., and V.A. Garmash. Statistical Analysis of Three-letter Combinations of a Russian Text 78

The authors present methods and results of a study of frequency of three-letter combinations of a Russian text and determine the rate of transmission of telegraph information. There are 3 references: 1 Soviet and 2 English.

Solomonov, V.D. Errors in the Synthesis of Characteristics 81

The author presents a theoretical proof of the possibility of synthesizing characteristics and analyzes the error of synthesis by means of a delay-line system. There are 5

Tsegel', G.I. Some Problems in the Operation of a Time Equalizer 92

The author derives an expression for determining delay time of a time equalizer from the pulse characteristic of a communication channel and describes the nature of equalizer distortions. He also discusses deviations of the attenuation characteristic of an equalizer operating in a linear spectrum. There are 9 references: 3 Soviet and 6 English.

AUTHOR: Garmash, V.A. SOV/106-59-2-1/11

TITLE: A Method for the Construction of an Optimum Binary Code (Sposob postroyeniya optimal'nogo dvoichnogo koda)

PERIODICAL: Elektrosvyaz', 1959, Nr 2, pp 3 - 7 (USSR)

ABSTRACT: After briefly recounting the work of Shannon, Fano and Huffman (Refs, 1, 4, 5) on minimum redundancy codes, i.e. codes in which the length of the code combination is inversely proportional to the probability of occurrence of the message and in which message separation signals are unnecessary, the author describes a method for the construction of such a code. All the messages of the set are arranged in order of decreasing probability (x_1, x_2, ...x_{n-1}, x_n) and the necessary number of binary symbols and the code combination of each message are determined by construction of a geometric, branching "tree" (Figure 1). From the initial point A, the apex, a pyramid is constructed by successive branching. Movement along a link to the left is denoted by one and to the right by zero. A complete code tree is obtained by successive branching from all the apexes. After k successive steps, the k^{th} "level" is formed by the apexes.

Card1/3

A Method for the Construction of an Optimum Binary Code

If, for the x_{n-1} message, m_{n-1} symbols are required (the least probable message also uses m_{n-1} symbols), then any particular code combination on the m_{n-1} level is chosen for the x_{n-1} message. For the x_n message, the code combination differing from the code combination for the x_{n-1} message only in the last symbol is used. This latter combination lies alongside the previous combination and has a common apex with it. Those code combinations which lie at the apexes encountered on the path from the x_n (or from x_{n-1}) message combinations to the apex A cannot be used for any of the remaining n-2 messages. For the x_{n-2} message, the code combination is chosen which lies at the apex, movement from which to the apex A involves the greatest number of common links with the previously chosen code combinations. This process is repeated until all the messages have been allotted code combinations. This then is

an optimum binary code for that set of messages. The procedure is illustrated by an example (Figure 2 and Table 1). The method is then generalised to code combinations having alphabets of more than two symbols (Figure 3 and Table 2). Corresponding Member of the Ac.Sc.Ukrainian SSR A.A. Kharkevich and Professor E.L. Blokh advised the author in this work.
There are 3 figures, 2 tables and 7 references, 3 of which are Soviet and 4 English.

SUBMITTED: September 13, 1958

GARMASH, V.A.

Methods of application of punched card machines in the analysis of communication statistics. Probl.pered.inform. no.2:65-72 '59. (MIRA 12:11)
(Electronic calculating machines)
(Telecommunication--Tables, calculations, etc.)

PHASE I BOOK EXPLOITATION SOV/4480

Akademiya nauk SSSR. Laboratoriya sistem peredachi informatsii

Problemy peredachi informatsii, Vyp. 5: Statisticheskoye kodirovaniye (Problems in the Transmission of Information, No. 5: Statistical Coding) Moscow, 1960. 125 p. 4,000 copies printed.

Resp. Eds. for this volume: E.L. Blokh (Resp. Ed.), and V.G. Solomonov (Deputy Resp. Ed.); Ed. of Publishing House: G.Yu. Shteynbok; Tech. Ed.: O.G. Ul'yanova.

PURPOSE: This book is intended for readers interested in systems and methods of coding.

COVERAGE: This collection of 14 articles on statistical coding written by staff members of the Laboratoriya sistem peredachi informatsii Akademii Nauk SSSR(Laboratory of Information Transmission Systems of the Academy of Sciences USSR). The articles were presented as lectures and discussed at the enlarged session of the Scientific Council of the Laboratory, April 16 and 17, 1959. No personalities are mentioned. References accompany 13 of the articles.

~~Card 1/4~~

TABLE OF CONTENTS:

LEBEDEV, D.S.; GARMASH, V.A.

Statistical analysis of a three-letter combination of Russian text. Probl.pered.inform. no.2:78-80 '59. (MIRA 12:11)
(Information theory) (Mathematical statistics)

43340
S/044/62/000/011/062/064
A060/A000

16.6810

AUTHOR: Garmash, V. A.

TITLE: Method of applying computers to the statistical analysis of messages

PERIODICAL: Referativnyy zhurnal, Matematika, no. 11, 1962, 74, abstract 11V413 (In collection: "Probl. peredachi informatsii". no. 2. Moscow, AN SSSR, 1959, 65 - 72)

TEXT: Using the example of an analysis of a message consisting of 100 thousand elements taking 8 discrete values, four variants of the statistical analysis of frequencies of occurrence of different four-element combinations by the use of digital computers are analyzed: 1. From the punched tape on which the message is recorded each punched card is loaded with only one combination of four elements by a fourfold passage of the punched tape with a one-element shift every time. The total deck of cards is equal in number to the number of elements investigated, i. e. 100,000. After four passes of cards through a sorting machine and a pass through the tabulator the finished result is obtained.

Card 1/3

Method of applying computers to the...

2. From the punched tape one fills successively all the 80 columns of every punched card, and the deck of 1,250 cards is sorted according to all possible four-element combinations of neighboring elements. The result is transferred to temporary punched cards (the deck of which can exceed the basic deck by a factor of 77 in number), from which the final result is calculated. This variant is not recommended on account of the great probability of error. 3. The data are transferred from the punched tape onto 1,250 cards, filling up all the 80 columns on each card. Then by a 77-fold pass through the reproducer one obtains the four-element cards and from then on proceeds as in variant 1. 4. An optimal number of columns of each punched card is used (in the example analyzed - 7), which sharply reduces the size of the card deck (the method of calculating the optimal number of columns is given). This variant is a combination of the first and second variants. It is the most optimal and it is expedient to use it in the statistical analysis of messages.

M. I. Grinev

[Abstracter's note: Complete translation]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R000514330001-4"

Method of applying computers to the...

Variant No.	Processing time for one subject (in hours)	Number of punched cards per subject (in thousands)	Number of punched cards per subject in mass-processing of subjects (in thousands)
1	92	100	5
2	-	-	-
3	53.5	100.75	6.3
4	40	43.55	4.83

S/024/60/000/03/025/028
E140/E463

AUTHORS: Garmash, V.A., Pereverzev-Orlov, V.S. and Tsirlin, V.M. (Moscow)

TITLE: On a Quasi-Topological Method of Character Recognition

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, Nr 3, pp 180-182 (USSR)

ABSTRACT: Alphabetical and numerical characters may be coded by tracing their outlines and determining their topological features. In the present communication only the external outline is traced (the article concerns the Russian alphabet but an example in the Latin alphabet where this assumption would be significant would be the letter Q where the part of the tail inside the body of letter would be omitted). The coding consists of noting the number of branches emerging from each node (in the letter I there are 2 nodes with one branch each, in the letter A there are 4 nodes with 1, 3, 3, 1 branches respectively (neglecting serifs)). Depending on the node at which the scanning procedure is commenced, the code obtained will have a cyclical permutation. Further, several letters may have the same code, eg T and Y.

Card 1/2

S/024/60/000/03/025/028
E140/E463

On a Quasi-Topological Method of Character Recognition

However, assuming the characters to be distributed as in a normal printed page, starting the scan at the same relative position in each character, the number of characters with identical codes is reduced because the cyclical permutations are ignored and a single code is obtained for each letter. However, neglecting the cyclical permutations is the reason why this procedure is called quasi-topological rather than topological. There are 2 figures, 2 tables and 5 references, 3 of which are English, 1 German and 1 Soviet.

SUBMITTED: January 6, 1960

Card 2/2

GARMASH, V.A.; KIRILLOV, N.Ye.

Effectiveness of Shannon's coding method. Probl.pered. inform. no.5:9-11 '60. (MIRA 13:7)
(Information theory)

GARMASH, V.A.

Transmission of phototelegraph communications by use of statistical coding. Probl.pered.inform. no.5:75-82 '60. (MIRA 13:7)
(Information theory) (Phototelegraphy)

GARMASH, V.A.; KIRILLOV, N.Ye.; LEBEDEV, D.S.

Experimental investigation of statistical properties of communication sources. Probl.pered.inform. no.5:112-122 '60. (MIRA 13:7)
(Information theory)

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B012/B060

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AUTHOR: Garmash, V. A., Active Member of the Society

TITLE: Minimal Description by Program Scanning

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 10, pp. 17-20

TEXT: Problems concerning the minimal representation of any black and white images for their automatic identification are studied here. The problem is that of identifying images by one of the possible standard images previously stored in the memory. The problem of minimal representation of images consists in finding the minimal number of characteristics, the checking of which is sufficient to identify the respective images. A particular program scanning is proposed for minimal representation. In this method, the examination of every element depends on the value of the preceding element. The method of determining the sequence of cell elements with the largest information is described. An illustrative example is added. It is pointed out that the method of minimal representation can be extended also to the case where images with m-gradations are submitted for identification. The author thanks A. A. Kharkevich,

Card 1/2

28221
S/194/61/000/005/062/078
D201/D303

6.9500

AUTHORS: Garmash, V.A., Igel'nik, B.M. and Kacherovich, Ya.A.

TITLE: Information coding by means of a uniform statistical code

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1961, 3, abstract 5 I35 (Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR, 1960, no. 1, 17-24)

TEXT: Two methods are considered of increasing the quantity of information from the point of view of statistical structure. The first method relates to the transmission of a set of information $a_1, a_2, \ldots a_n$, in which there exists one information a_j with a high probability of occurrence with a low probability of all other informations. It is proposed in this case to split the resulting sequence of information into groups consisting of: 0, 1, 2, ... k-1 informations a_j and one of one information a_i ($i = 1, 2 \ldots n$, $i \neq j$) or of k informations a_j. To all possible $N = k(n-1) + 1$ groups

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the relative code combinations of the ($\log_2$ N) - digit binary code are arranged which are the results of coding. The second method of coding is related to the transmission of a sequence of information, containing one low probability information with a relatively high probability of all remaining information. The efficiency of the proposed methods of coding is discussed (the symbol (x) in the article denotes the smallest whole number in excess of x) [Abstracter's note: Complete translation]

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AUTHOR: Garmash, V. A. Candidate of Technical Sciences

TITLE: Seminar on Reading Devices

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, No. 9, pp. 103-104

TEXT: The Sektsiya kiberneticheskikh mashin Nauchnogo soveta po kibernetike Akademii nauk SSSR (Section of Cybernetic Machines of the Scientific Council for Cybernetics of the Academy of Sciences, USSR) organized a seminar on pattern recognition devices from June 13 - 14, 1960. Work was carried out under participation of institutions of Moscow and other cities, which carried out research work in this field. At the Vychislitel'nyy tsentr Akademii nauk USSR (Computing Center of the Academy of Sciences, UkrSSR) models of automatic reading machines are being worked out by V. M. Glushkov and V. A. Kovalevskiy. At the Odesskiy elektrotekhnicheskiy institut svyazi (Odessa Electrotechnical Institute of Communications) a reading device is being worked out by A. D. Krisilov. Moreover, the following lectures were delivered: V. M Tsetlin - the quasi-topo-

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logical method of letter recognition, for which purpose the control device worked out at the Laboratoriya sistem peredachi informatsii Akademii nauk SSSR (Laboratory for Systems of Information Transmission of the Academy of Sciences, USSR) may be used; A. G. Vitushkin - on his principle of selecting characteristic features of letters; E. M. Braverman - the method of "training" the machine, which is being investigated at the Institut avtomatiki i telemekhaniki Akademii nauk SSSR (Institute of Automation and Telemechanics of the Academy of Sciences, USSR), by means of an operator; V. S. Fayn - the problem of identifying a spatial object.

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AUTHORS: Garmash, V.A., Pereverzev-Orlov, V.S., and Tsirlin, V.M. (Moscow)

TITLE: A Device for Scanning the Edges of Patterns

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1961, No.1, pp. 166-170

TEXT: The logic of many pattern recognition systems uses information about the edge of a pattern. Although this information can be derived from a systematic scan in two perpendicular directions, it is much more convenient to obtain it from a device which scans the edge of the pattern directly. The two main problems which arise in a scanner of this kind are: 1) the problem of assuring that the position of the scanning spot on the border of the pattern is stable; and 2) the problem of making the spot follow the border in a predetermined direction. These two problems can theoretically be solved as follows. The spot is caused to move in a small circle, which intersects the border of the pattern. Each time that the spot crosses the border - say from white to black, the centre of the small scanning circle is

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moved to the point where the intersection occurred. This will ensure that the scanning spot will follow the border in a predetermined direction and never move away from it. A block diagram of a system designed to carry out this type of scanning is shown in Fig.2. A sine-wave generator 1 drives a phase splitter 3 through a delay network 2. The phase splitter has two outputs with a 90° phase difference, which are eventually used to produce the small scanning circle. The sine-wave generator also drives another phase splitter 4, which is similar to 3. The outputs from 4 are gated by two 'end gates' 5 and 6, and drive two integrators 7 and 8. The outputs of these two integrators are used to control the position of the spot on the screen of the scanning tube 11 through two amplifiers 9 and 10. A real image of the scanning tube screen is formed on the pattern being scanned, and a photomultiplier 12 is actuated by reflected light from this pattern. The output signal is amplified by a video-amplifier 13, and is supplied to a differentiator and pulse shaper 14. The output of 14 is a

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short rectangular pulse, which occurs whever the scanning spot passes from white to black. It is used to gate the instantaneous values of the basic driving waveforms to the integrators 7 and 8. The monitoring tube 15 is driven by the circuits in blocks 16 to 21, which operate in a very similar way to the ones which are used to drive the scanning tube. A variable delay 22 is introduced to allow the image on tube 15 to be rotated. The size of the scanning circle is controlled by two amplifiers 23 and 24. These amplifiers have a variable gain which is controlled by 25. The device uses mostly conventional tube circuitry. Two transistors are used in each of the gates. The scanner was tested with a basic frequency of 10 kc/s, a spot diameter of 0.4 mm and a scanning circle diameter of 1.5 mm, and a unit shift of the scanning circle of 0.5 mm. This led to a following speed of about 5 metres/sec. The scanner was well able to follow shapes substantially larger than the scanning circle. Shapes smaller than the scanning circle were detected as 'dots', the scanning circle positioning itself around them. The scan