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To avoid excessive duplication in reporting, only laser entries concerning high-power effects have been included here, since all laser material will appear routinely in the quarterly bibliographies.

An index identifying source abbreviations is appended.

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INTRODUCTION

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Assovskiy, I. G., and A. G. Istratov. Ignition of powders under optical radiation. ZhPMTF, no. 5, 1971, 70-77.

Basov, N. G., O. N. Krokhin, N. V. Morachevskiy, and G. V. Sklizkov. Internal and surface effect of laser radiation on optical glass. ZhPMTF, no. 6, 1971, 44-49.

Boyko, Yu. I., Ya. Ye. Geguzin, and A. K. Yemets. Character of deformation in the area of a pulsed laser beam on CsI single crystals. FTT, no. 10, 1971, 3096-3097.

Fekeshgazi, I. V. Structure of the flare formed at the input surface of alkali halide crystals by a laser beam. IN: Kvantovaya elektronika. Kiyev, Izd-vo naukova dumka. No. 5, 1971, 256-259.

Kasatochkin, V. I., M. Ye. Kazakov, V. V. Sarvanskiy, A. N. Nabatnikov, and N. P. Radimov. Synthesis of a new allotropic form of carbon from graphite. DAN, v. 201, no. 5, 1971, 1104-1105.

Lisitsa, M. P., and I. V. Fekeshgazi. Study of the dynamics of flare development, formed by laser radiation on the surface of transparent dielectrics. IN: Kvantovaya elektronika. Kiyev, Izd-vo naukova dumka. No. 5, 1971, 251-256.

Nemchinov, I. V., and S. P. Popov. Shielding of a surface evaporating under the action of a laser, for the case of temperature and ionization nonequilibrium. ZhPMTF, no. 5, 1971, 35-45.

Nevskiy, A. P. Electron temperature at the surface of metals subjected to powerful thermal fluxes. TVT, no. 4, 1970, 898-899.

Pogodayev, V. A., V. I. Bukatyy, S. S. Khmelevtsov, and L. K. Chistyakova. Dynamics of the explosive vaporization of water drops in an optical radiation field. IN: Kvantovaya elektronika. Moskva. No. 4, 1971, 128-130.

Putrenko, O. I., and A. A. Yankovskiy. Study of optical erosion of metals during a pulse of laser radiation. ZhPS, v. 15, no. 4, 1971, 596-604.

Sultanov, M. A. Study of the destruction of polymer films by a laser beam, as a function of the type and structure of the material. Mekhanika polimerov, no. 6, 1971, 1092-1093.

B. Laser-Plasma Interaction

Borisov, V. V. The stable regime in the case of incidence of an e-m signal of finite duration on an ionization front moving at light velocity. IVUZ Radiofizika, no. 12, 1971, 1923-1924.

Bud'ko, N. I., V. I. Karpman, and D.R. Shklyar. Stability of a plasma in the field of an axial monochromatic wave. ZhETF, v. 61, no. 4, 1971, 1463-1476.

Generalov, N. A., V. P. Zimakov, G. I. Kozlov, V. A. Masyukov, and Yu. P. Rayzer. Experimental investigation of a continuous hot optical discharge. ZhETF, v. 61, no. 4, 1971, 1434-1446.

Kazakov, A. Ye., I. K. Krasyuk, P. P. Pashinin, and A. M. Prokhorov. Experimental observation of laser radiation amplification from the interaction of opposed laser beams in a plasma. ZhETF P, v. 14, 1971, 416-418.

Rayzer, Yu. P. Continuous sustaining of a plasma by laser radiation, and the optical plasmatron. VAN, no. 10, 1971, 28-32.

Rayzer, Y., G. Kozlov, and N. Generalov. Nonlinear absorption of intensive radiation in plasma. Soviet Science Review, v. 1, no. 1, 1970, 42-46.

Zakharov, S. D., Ye. L. Tyurin, and V. A. Shcheglov. On the propagation of monochromatic radiation through a plasma. ZhETF, v. 61, no. 4, 1971, 1447-1451.

II. Effects of Strong Explosions

A. Shock Wave Effects

Adadurov, G. A., O. N. Breusov, A. N. Dremin, V. N. Drobyshev, and A. I. Rogacheva. Effect of dynamic pressures on IV oxides by subgroup. FGiV, no. 2, 1971, 272-275.

Adadurov, G. A., V. V. Gustov, and P. A. Yampol'skiy. Device for containing material subjected to shock compression at various pressures. FGiV, no. 2, 1971, 284-289.

Balakin, V. B., and V. V. Bulanov. A numerical solution to the problem of interaction of a shock wave with a cylinder in a supersonic flow. I-F Zh, v. 21, no. 6, 1971, 1033-1039.

Batsanov, S. S., Ye. V. Dulenov, E. M. Moroz, L. V. Lukina, and V. V. Roman'kov. Effects of explosions on matter. Shock compression of fluorides of rare earth metals. FGiV, no. 2, 1971, 266-269.

Bessonov, V. G. Pressure field from normal incidence of a plane shock wave on an elastic two-layer element of finite thickness. IN: Trudy instituta. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii sudostroyeniya. No. 106, 1971, 12-20.

Bobolev, V. K., I. A. Karpukhin, and V. A. Teselkin. Mechanism for inducing a shock explosion in mixtures of ammonia perchlorate with hot additives. FGiV, no. 2, 1971, 261-264.

Bulakh, B. M. A type of interaction of the boundary layer with an external (nonviscous) flow at supersonic velocities. PMM, no. 4, 1971, 6330637.

Buravova, S. N., and A. N. Dremin. Calculation of a process for generating a detonation shock wave with a drooping pressure profile in liquid explosives. FGiV, no. 1, 1971, 117-121.

Chagelishvili, E. Sh. Explosive hardening of a metallo-ceramic solid alloy. FGiV, no. 2, 1971, 275-280.

Chistyakov, V. P., S. N. Bondarev, and Yu. I. Fadeyenko. Study of detonation of cumulative charges in casings of glass tubing. Dinamika sploshnoy sredy, no. 4, 1970, 170-173.

Chutov, Yu. I. Ionization study of a shock wavefront in a gas-discharge plasma. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 1969, 54.

Dremin, A. N., S. A. Koldunov, and K. K. Shvedov. Initiating detonation by shock waves in explosive charges. FGiV, no. 1, 1971, 103-111.

Dulin, I. N., V. N. Zubarev, Yu. N. Novikov, and M. Ye. Vol'nin. Chemical reactions from dynamic compression. Zhurnal fizicheskoy khimii, no. 11, 1971, 2904-2905.

Ivanov, A. A., L. L. Kozorovitskiy, V. D. Rusanov, R. Z. Sagdeyev, and D. N. Sobolen... Experimental observation of electron shock waves in a collisionless plasma. ZhETF P, v. 14, 1971, 593-596.

Karpukhin, V. T., and A. V. Nedospasov. Ionization front in a magnetic field. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 1969, 72.

Kozachenko, L. S., and B. S. Khristoforov. Parameters of a shock wave in water from an explosion at the bottom of the vessel. FGiV, no. 1, 1971, 127-135.

Lobodyuk, V. A., G. I. Savvakin, N. P. Fedas, and L. G. Khandros. Structural changes from heating a nickel-iron alloy following shock loading. FMiM, no. 4, 1971, 893-896.

Losev, S. A. Elementary physicochemical processes behind a shock wave front in air. IN: Trudy I mezhvuzovskoy konferentsii po khimii i fizike nizkotemperaturnoy plazmy. Khimiya i fizika nizkotemperaturnoy plazmy. Izd-vo Moskovskogo universiteta, 1971, 51-55.

Losev, S. A., and A. M. Lyzhin. Structure of a shock wave in air containing traces of water vapor. IN: Nauchnyye trudy Instituta mekhaniki MGU. No. 3, 1970, 136-156.

Men'shikov, V. M. Invariant solutions of gas dynamic equations by means of a shock wave. Dinamika sploshnoy sredy, no. 4, 1970, 163-169.

Mucha, Z. Reflection of strong shock wave between parallel electrodes. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 196 , 73.

Myzhenkov, V. I., and Yu. P. Rayzer. An ionization wave propagated by diffusion of resonant quanta and sustained by shf radiation. ZhETF, v. 61, no. 5, 1971, 1882-1890.

Pataraya, A. D., and V. I. Svimonishvili. Structure of a shock wave in a weakly ionized plasma. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 1969, 55.

Pogorelov, V. I. Shock of supersonic jets on a plane. FiKhOM, no. 6, 1971, 941-942.

Pustovalov, V. K. Self-similar motion of a gas behind a shock wavefront sustained by radiation. DAN B, v. 15, no. 12, 1971, 1079-1081.

Simonov, I. V. Diffraction of a strong shock wave on a weakly-defined wedge. Zh PMTF, no. 6, 1971, 107-114.

Simonov, V. A. Flows induced by the incidence of a shock wave on a wedge-shaped cavity. FGiV, no. 2, 1971, 280-284.

Slepicka, F. Ionization relaxation time in argon behind a reflected shock wave. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 1969, 65.

Smekhov, G. D., and S. A. Losev. Examining the process of associative ionization of nitrogen behind a shock wave front. IN: Trudy I mezhvuzovskoy konferentsii po khimii i fizike nizkotemperaturnoy plazmy. Khimiya i fizika nizkotemperaturnoy plazmy. Izd-vo Moskovskogo universiteta, 1971, 157-159.

Smekhov, G. D., and M. S. Yalovik. Experimental study of relaxation processes behind a shock wave front in nitrogen. IN: Nauchnyye trudy. Institut mekhanika Moskovskogo universiteta. No. 3, 1970, 5-32 (RZh Mekh, 4/71, #4B179).

Stikhanovskiy, B. N. Approximate method for computing times, restitution coefficient, force, and energy transfer in free direct shock of a body. IN: Fiziko-tekhnicheskiyye problemy razrabotki poleznykh iskopayemykh. No. 1, 1971, 70-85.

Sultanov, M. A., and B. N. Narzullayev. Investigation on the interaction of shock-compressed plasma volumes, formed in high-power pulse discharges, with some solids. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 1969, 123.

Testov, V. G. Studies of electron relaxation in a shock-heated plasma by microwave radiation. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 1969, 56.

Vakatov, V. P., A. B. Karasev, V. P. Malyavin, and B. K. Tkachenko. Studies of an electric discharge shock tube. ZhPS, v. 15, no. 6, 1971, 989-992.

Vashchenko, V. I., Yu. N. Matyushin, A. K. Parfenov, Yu. A. Lebedev, and A. Ya. Anin. Heat transfer during low-speed detonations. FGiV, no. 1, 1971, 121-126.

Yakusheva, O. B., V. V. Yakushev, and A. N. Dremin. On the possibility of prolonging the diffusion processes in solids following a shock compression period. FGiV, no. 2, 1971, 264-266.

Yershov, I. V., Ye. A. Zhmayeva, G. A. Makarevich, A. P. Ovechkin, and S. K. Shimarev. Study of blast waves formed in a diaphragm electric discharge chamber. MZhiG, no. 4, 1971, 159-163.

Zheleznyak, M. B., and A. Kh. Mnatsakanyan. Nonequilibrium zone radiation behind strong shock waves in air. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 1969, 57.

Zhikhareva, T. V., and G. K. Tumakayev. Kinetics of excitation and ionization of mercury atoms in a shock tube. IN: 9th International Conference on Phenomena in Ionized Gases. Bucharest, 1-6 Sept. 1969. Bucharest, 1969, 63.

B. Hypersonic Flow

Betyayev, S. K. Hypersonic self-similar flow around a cone moving according to a power law. IN: Uchenyye zapiski Tsentral'nogo aero-gidrodinamicheskogo instituta. V. 1, no. 3, 1970, 15-29. (RZhMekh, 4/71, #4B232)

Lebedev, M. G., and G. F. Telenin. Interaction between a supersonic jet and an acoustic field. IN: Nauchnyye trudy Instituta mekhaniki Moskovskogo universiteta. No. 5, 1970, 88-107. (RZhMekh, 7/71, #7B405)

Matveyeva, N. S., and V. Ya. Neyland. Intense blowing on a body of finite length in a supersonic flow. IN: Uchenyye zapiski Tsentral'nogo aero-gidrodinamicheskogo instituta, no. 5, 1970, 13-22 (RZhMekh, 7/71, #7B713)

Minostsev, V. B., and G. F. Telenin. Study of supersonic spatial flow around blunt bodies. IN: Nauchnyye trudy Instituta mekhaniki Moskovskogo universiteta. No. 5, 1970, 4-19. (RZhMekh, 7/71, #7B405)

Shkadova, V. P. Three-dimensional flow around the frontal surfaces of blunt bodies in a nonequilibrium supersonic air stream. IN: Nauchnyye trudy Instituta mekhaniki Moskovskogo universiteta. No. 5, 1970, 26-34. (RZhMekh, 7/71, #7B405)

Shugayev, F. V., and Yu. G. Lisin. Study of a plane shock wave - blunt body interaction in a supersonic flow. I-F Zh, v. 21, no. 3, 1971, 419-422.

C. Exploding Wire

Aleksandrov, A. F., V. V. Zosimov, S. P. Kurdyumov, Yu. P. Popov, A. A. Rukhadze, and I. B. Timofeyev. Dynamics of and radiation from direct high-current discharges in air. ZhETF, v. 61, no. 5, 1971.

D. Plasma Devices

Dorodnov, A. M., A. B. Ivashkin, N. P. Kozlov, and N. N. Reshetnikov. Processes in the inner electrode of a quasistationary plasma accelerator. IN: Samoletostroyeniye i tekhnika vozdushnaya flota. No. 23, 1970, 28-33.

Kolesnikov, P. M., N. S. Kolesnikova, and I. B. Gavris. Inductive acceleration of conductors in plasma. I-F Zh, v. 21, no. 6, 1971, 1115-1116.

Kolesnikov, P. M., N. S. Kolesnikova, and I. B. Gavris. Coaxial plasma acceleration with optimal inductive energy storage. I-F Zh, v. 21, no. 6, 1971, 1117.

E. Equations of State

Abovskiy, V. A., and V. A. Rabinovich. Equations of state for argon, krypton and xenon in the liquid and dense gas phases. IN: Sbornik, Teplofizicheskyye svoystva veshchestv i materialov. Moskva, Standardtizdat. No. 3, 1971, 44-57. (RZhKh, 24/71, 19ABV, #24B777)

Stesik, L. N. Calculating detonation parameters of explosives containing metals, using the equation of state of an ideal gas. FGiV, no. 1, 1971, 111-116.

Tsiklis, D. S., L. R. Linshits, and S. S. Tsimmerman. Thermodynamic properties of carbon dioxide at high pressures and temperatures. IN: Sbornik, Teplofizicheskyye svoystva veshchestv i materialov. Moskva, Standardtizdat. No. 3, 1971, 137-143. (RZhKh, 24/71, 19ABV, #24B863)

Veksler, L. S., I. I. Perel'shteyn, and V. A. Rabinovich. Equation of state for gaseous argon in the temperature range from the triple point to 1200°K and densities to twice critical. IN: Sbornik, Teplofizicheskyye svoystva veshchestv i materialov. Moskva, Standardtizdat. No. 3, 1971, 35-43. (RZhKh, 24/71, 19ABV, #24B776)

F. High Pressure Research

Al'tshuler, L. V., M. I. Brazhnik, and G. S. Telegin. Strength and elasticity of iron and copper under high shock-loading pressures. ZhPMTF, no. 6, 1971, 159-166.

Godunov, S. K., A. A. Deribas, I. D. Zakharenko, and V. I. Mali. Study of metal ductility under high-speed shocks. FGiV, no. 1, 1971, 135-141.

Voronov, F. F., and S. B. Grigor'yev. Effect of pressures up to 100 kbar on sonic velocity in sodium chloride and cesium chloride. IN: Trudy Akusticheskogo instituta. No. 14, 1971, 69-77 (LZhSt, 38/71, #120603)

G. Atmospheric Physics

Kozlov, V. I., and Yu. G. Shafer. A possible mechanism for localizing fission products from a high-altitude thermonuclear explosion. Kosmicheskiye issledovaniya, no. 4, 1971, 630-631.

H. Miscellaneous Explosion Effects

Abramova, K. B., V. P. Valitskiy, N. A. Zlatin, B. P. Peregud, and I. Ya. Pukhonto. Radiation generated by rapid deformation and destruction of metals. DAN, v. 201, no. 6, 1971, 1322-1325.

Barzykin, V. V., E. A. Shtessel', F. I. Dubovitskiy, and A. G. Merzhanov. Heat transfer mechanism during thermal detonation of liquid explosives. FGiV, no. 2, 1971, 304-306.

Bukhtin, V. S., M. S. Bogomolov, A. A. Mamontov et al. Study of the durability of explosion-hardened G13L steel. IN: Trudy Vostochnogo nauchno-issledovatel'skogo gornorudnogo instituta i gornogo fakulteta Siberskogo metallurgicheskogo instituta. No. 10, 1970, 179-184. (LZhS, 24/71, #79462)

Dubovik, A. V., and V. K. Bobolev. On the bubbling mechanism of initiating an explosion in a liquid layer by shock. FGiV, no. 2, 1971, 245-253.

Dubovik, A. V., and V. K. Bobolev. Relationships governing explosion generation in nitroglycerin by shock collapse of an air cavity. FGiV, no. 2, 1971, 253-260.

Gorbacheva, N. P. Effects of detonation velocity and charge structure of an explosive on parameters of seismo-explosive waves in loess. FGiV, no. 2, 1971, 290-295.

Kestenboym, Kh. S. Calculation of a point explosion with counter-pressure by a simple difference method. IN: Vychislitel'nyye metody i programmirovaniye. Moskovskiy institut. No. 15, 1970, 130-134 (LZhSt, 24/71, #78986)

Kinelovskiy, S. A., N. I. Matyushkin, and Yu. A. Trishin. Convergence of an incompressible ring toward the center from the action of explosion products. IN: Sbornik. Dinamika sploshnykh sredy. Novosibirsk. No. 5, 1970, 23-32 (RZhMekh, 9/71, #9B168)

Korol'kov, V. L., and M. A. Mel'nikov. Study of the resistance of a stream of explosion products from secondary explosives. IN Sbornik. Ispol'zovaniye vzryva v narudno khozyaystve. Ch. I. Kiyev, naukova dumka, 1970, 83-91. (RZhMekh, 7/71 #7B58)

Merzhanov, A. G., and E. A. Shtessel'. Thermal explosion in liquid reagent systems for the case of thermal convection. FGiV, no. 1, 1971, 68-76.

Pavlov, F. Underwater explosion. Tekhnika i vooruzheniye, no. 6, 1971, 14-15.

Naugol'nykh, K. A., and N. A. Roy. Comparison of electric discharges in water with underwater explosions. IN: Elektricheskiye razryady v vode. Akusticheskiy institut, AN SSSR. Moskva, Izd-vo nauka, 1971, 152-153.

Rodionov, V. N., and A. P. Sukhotin. Parameters of waves generated by a spherical explosion in metals of varying hardness. FGiV, no. 1, 1971, 142-146.

Shtessel', E. A., K. B. Pribytkova, and A. G. Merzhanov. A numerical solution to the problem of a thermal explosion with free convection taken into account. FGiV, no. 2, 1971, 167-178.

Shurshalov, L. V. Calculation of strong underwater explosions. MZhiG, no. 5, 1971, 36-40.

Voronov, V. F., and S. A. Kutolin. Obtaining a film by a plasma deposition method. IN: Khimiya i fizika nizkotemperaturnoy plazmy. Trudy I mezhvuzovskoy konferentsii pokhimii i fizike nizkotemperaturnoy plazmy. Izd-vo Moskovskogo universiteta, 1971, 268-271.

Zakharenko, I. D. Thermal regime in the vicinity of an explosion-welded seam. FGiV, no. 2, 1971, 269-272.

Zubkov, P. I., L. A. Luk'yanchikov, and B. S. Novoselov. Electrical conductivity in the detonation zone of condensed explosives. FGiV, no. 2, 1971, 295-299.

J. Conferences

Bayev, V. K., B. N. Kondrikov, V. P. Korobeynikov, V. V. Mitrofanov, R. I. Soloukhin, and M. Ye. Topchiyan. Studies of the gas dynamics of explosions and reacting systems. (Rabota III Mezhdunavodnogo kollokviuma po gazodinamike vzryva i reagiruyushchikh sistem. Marseilles, 12-17 Sept. 1971.) FGiV, no. 2, 1971, 311-317.

III. Geosciences

Aksenovich, G. I. Recorder for determining microseism level. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 41-43.

Aksenovich, G. I., and Yu. G. Kristev. Control console of a large seismological observatory. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 52-58.

Aksenovich, G. I., and Yu. G. Kristev. Seismic magnetic-tape recorder with frequency modulation. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 12-17.

Aksenovich, G. I., et al. Pen recorders. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 43-51.

Aksenovich, G. I., et al. Portable transistorized seismic recorder for deep seismic sounding. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 36-41.

Aksenovich, G. I., et al. Seismic recording channel for long periods. IN: AN SSSR. Institut fiziki Zemli. Eksperimental 'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 17-20.

Antonova, L. V. Study of the field of the dynamic characteristics of ground motion. IN: AN SSSR. Institut fiziki Zemli. Eksperimental 'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 107-112.

Aptikayev, F. F. Determination of the energy of seismic sources. IN: AN SSSR. Institut fiziki Zemli. Eksperimental 'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 59-65.

Artem'yev, M. Ye. The relationship of the disruption of isostatic equilibrium to seismicity. IN: AN SSSR. Institut fiziki Zemli. Eksperimental 'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 322-333.

Barsukov, O. M. Investigations into electrical criteria for earthquake prediction. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 392-398.

Bosovskiy, L. M., and G. O. Ovsepyan. The effects of earthquakes on the cascade equipment of the Chir-Yurtskikh hydroelectric power station. Gidrotekhnicheskoye stroitel'stvo, no. 1, 1972, 18-20.

Bugayevskiy, G. N., and V. A. Rogozhina. Determining the dip of the base of the crust based on seismic-wave arrival times at an array of stations. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 270-281.

Bulin, N. K. Comparison of deep-seismic sounding results with earthquake converted waves. Prikladnaya geofizika, no. 63, 1971, 23-35.

Chepkunas, L. S. Identification of a low-velocity crustal layer in the Garm region, based on the attenuation of converted waves from regional earthquakes. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 203-210.

Drobyshev, Yu. P., and T. P. Lebedeva. Analysis of seismological data using classification-theory methods. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 403-407.

Gadzhiyev, A. N., and S. S. Samedov. The Kuba taphrosyncline and its role in the formation of a foredeep at the southeastern tip of the Greater Caucasus (Prikaspiysko-Kubinskaya O blast', Azerbaydzhan SSR). IN: AN Azer SSR. Doklady, v. 27, no. 7, 1971, 65-70.

Gal'perina, R. M. Some results from studies of converted waves by the vertical seismic profiling method. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 239-253.

Gayskiy, V. N., and R. S. Mikhaylova. Study of some characteristics of the seismic process, based on weak earthquakes. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 313-322.

Grineva, T. I., et al. Studies of the exterior zone of the northern side of the trans-Caspian depression, using converted waves. Neftegazovaya geologiya i geofizika, no. 12, 1971, 34-37.

Kachalov, N. P., et al. Certain characteristics of an electrodynamic surface-wave transducer. IN: Moskovskiy universitet. Vestnik. Seriya 3, Fizika, astronomiya, no. 6, 1971, 729-732.

Khalturin, V. I. Seismic-wave attenuation in the crust of northern Tien Shan. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 125-136.

Kovylin, V. M., and A. F. Beresnev. Data on equipment and methods for seismic research in Japan. IN: Mezhduvedomstvennyy geofizicheskiy komitet. Geofizicheskiy byulletin', no. 23, 1971, 23-36.

Latynina, L. A. The accuracy of strain measurement on the earth's surface. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 387-392.

Lukk, A. A. Seismic-wave attenuation in the focal region of deep-seated Pamir-Hindu Kush earthquakes. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 87-97.

Lukk, A. A. Seismicity of the Pyandzh River basin and non-linear patterns in the reoccurrence graph. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 297-313.

Maksimov, A. B. The seismic characteristics of soils and correlations between them. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 136-145.

Maksimov, A. B. The seismic "rigidity" of soils. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 145-152.

Monakhov, F. I. Organization of research on earthquake prediction. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 407-415.

Nersesov, I. L., and L. S. Chepkunas. Low-velocity crustal layer in the Garm region. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 191-203.

Nersesov, I. L., et al. Space-time distribution of the travel-time ratios of shear and longitudinal waves in the Garm region. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 334-345.

Nikolayev, A. V. Experience with seismic arrays for studying reflecting boundaries in the crust and upper mantle. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 259-269.

Oblogina, T. I., and V. B. Piyp. Development of the theoretical fundamentals of the refracted-wave method. IN: Moskovsky universitet. Seriya 4. Geologiya, no. 6, 1971, 68-77.

Pavlov, V. D. Ground motion dynamics on canyon walls. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 118-125.

Pavlova, I. N. Dynamic aspects of the Aleutian earthquake of 4 February 1965 and its aftershocks, based on records from frequency-selective seismic recorders. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 163-179.

Pevnev, A. K., et al. Recent vertical movements of the earth's surface in the Garm region and their geological-geomorphological interpretation. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 376-387.

Ponomarev, V. S. Seismicity and the elastic energy of rock. IN: AN SSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 75-87.

Raŭtian, T. G., and G. I. Pavlova. Regional aspects of seismic-wave attenuation in the Naryn basin, during local earthquakes. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 112-118.

Rulev, B. G. The earthquake and explosion focus as a "double" projector of seismic waves. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 65-75.

Sedova, Ye. N. Study of discontinuities in the crust and upper mantle, based on the dynamic characteristics of distant earthquakes. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 97-107.

Shamina, O. G. Tenth General Assembly of the European Seismological Commission. IN: Mezhduvedomstvennyy geofizicheskiy komitet. Geofizicheskiy byulletin, no. 23, 1971, 71.

Shamina, O. G. Ultrasonic modelling of possible patterns of the structure of the upper mantle. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 254-258.

Simbireva, I. G. Focal mechanism of weak earthquakes in the Naryn River basin. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 360-375.

Skovorodkin, Yu. P., et al. Magnetic research in the epicentral zone. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 398-402.

Tregub, F. S. Analysis of the seismic-wave field and the velocity structure of the crust. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 217-239.

Tsvetkov, Ye. P. Statistical study of the spatial distribution of earthquakes. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 282-297.

Vasil'yev, Yu. F. Experimental study of the mechanism of the shear process. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 346-359.

Veytsman, P. S., and I. N. Galkin. Certain possibilities of seismic methods for studying the crust. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 210-217.

Volokhova, M. N., and Ya. I. Natarius. Designing dams built from local materials and massive concrete against seismic effects. Gidrotekhnicheskoye stroitel'stvo, no. 1, 1972, 38-42.

Zapol'skiy, K. K. Ch IIS frequency - selective seismic recording set. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 20-36.

Zapol'skiy, K. K. Spectral composition of the seismic waves from weak regional earthquakes. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 180-190.

Zapol'skiy, K. K., and R. P. Solov'yeva. Spectral characteristics of the strong Alaskan earthquake of 28 March 1964 and its aftershocks. IN: AN SSSR. Institut fiziki Zemli. Eksperimental'naya seysmologiya (Experimental seismology). Moskva, Izd-vo Nauka, 1971, 152-163.

Monographs

AN SSSR. Matematicheskiy institut im. Steklova. Matematicheskiye voprosy teorii difraktsii i rasprostraneniya voln (Mathematical problems in the theory of wave diffraction and propagation). Leningrad, Izd-vo Nauka, 1971, 148 p. (ITS: Trudy, no. 115, 1971).

Chernigovskiy, A. A. Metod ploskikh sistem zaryadov v gornom dele i stroitel'stve (Flat-charge method in mining and construction). Moskva, Izd-vo Nedia, 1971, 242 p.

Gushchin, V. I. Spravochnik vzryvnika na kar'yere (Handbook for the open-pit blaster). 2nd ed., rev., and enl., Moskva, Izd-vo Nauka, 1971. 221 p.

Sadovskiy, M. A., ed. Mekhanicheskiy effekt podzemnogo vzryva (Mechanical effect of an underground explosion). Moskva, Izd-vo Nedra, 1971. 224 p.

IV. Particle Beams

Abramovich, L. I., V. A. Gomzin, B. N. Klarfeld, and Y. N. Nastich. High current density glow discharge with hollow and plane cathodes. IN: 9th International Conference on Phenomena in Ionized Gases, Bucharest, 1-6 September 1969, 163.

Abramyan, Ye. A., G. F. Balykov, G. A. Bochkov, F. A. Sirotkin, Yu. I. Tychkov, I. L. Chertok, and A. N. Sharapa. A small sized electron accelerator tube. PTE, no. 5, 1971, 32-34.

Abramyan, Ye. A., V. A. Kornilov, V. M. Lagunov, A. G. Ponomarenko, and R. I. Soloukhin. A megavolt energy intensifier. DAN, v. 201, no. 1, 1971, 56-59.

Alekseyev, E. I. On describing the interaction of noncoherent radiation with matter. ZhPS, v. 15, no. 6, 1971, 1090-1093.

Alikhanyan, A. I. (ed.). Trudy VII Mezhdunarodnoy konferentsii po uskoritelyam zaryazhennykh chastits vysokikh energiy, Yerevan-Tsakhkadzor, 27 Aug. - 2 Sept. 1969. V 2-kh t., T. 2. (Proceedings of the 7th International Conference on Acceleration of High Energy Particles, Yerevan-Tsakhkadzor, Aug. 27 - Sept. 2, 1969. In 2 Vols.; Vol. 2.) Yerevan, AN ArmSSR, 1970, 751 p.

Bashmakov, Yu. A., K. A. Belovintsev, Ye. G. Bessokov, Ya. A. Vazdik, and P. A. Cherenkov. A passive inductive linear accelerator. KSpF, no. 5, 1971, 10-14.

Bazhenov, G. P., G. A. Mesyats, D. I. Proskurovskiy, V. P. Rotstein, and S. P. Vavilov. Anode processes of the vacuum pulse breakdown spark stage. IN: Proceedings of the 4th International Symposium on Discharges and Electrical Insulation in Vacuum, Waterloo, Ontario, Canada, 1-4 Sept. 1970. Waterloo, Ontario, University of Waterloo, 1970. 121-124.

Bazhenov, G. P., R. B. Baksht, E. A. Litvinov, G. A. Mesyats, D. I. Proskurovskiy, V. P. Rotstein, and S. P. Vavilov. Cathode flares during pulse breakdown in vacuum. IN: Proceedings of the 4th International Symposium on Discharges and Electrical Insulation in Vacuum, Waterloo, Ontario, Canada, 1-4 Sept. 1970. Waterloo, Ontario, University of Waterloo, 1970. 116-120.

Bek-Bulatov, I. Kh., and R. B. Nagaybekov. On the state of the cathode spot region during arc discharges in vacuum. ZhTF, no. 11, 1971, 2383-2384.

Brodskaya, B. Kh. Certain phenomena in liquids under the effect of pulse discharges. EOM, no. 2, 1971, 39-44.

Eydman, V. Ya. On the electron-positron cascade process in a strong steady-state electrical field. ZhETF, v. 61, no. 5, 1971, 1737 - 1742.

Gavrilenko, T. B., and G. O. Karapetyan. Resistance of activated glassed to a current of accelerated electrons. ZhPS, v. 15, no. 6, 1971, 1110-1112.

Globenko, Yu. G. Transient processes during injection of dense electron beams in a compressor. PTE, no. 5, 1971, 38-42.

Kabanov, A. N., and Ye. Ye. Chernova-Stolyarova. Study of processes occurring from the action of intense electron beams in liquids. FiKhOM, no. 6, 1971, 97-98.

Kalyatskiy, I. I., G. S. Korshunov, and G. A. Kiselev. Variation in spark gap resistance in water from the action of a high pulsed voltage. EOM, no. 6, 1971, 32-37.

Katayev, I. G., N. F. Lipatov, A. N. Meshkov, and I. I. Rozhkov. A generator of powerful nanosecond pulses using nonlinear ferrite transmission lines. PTE, no. 5, 1971, 126-130.

Knyazyatov, A. S., and V. V. Mal'tsev. Measuring the density distribution of accelerated particles in pulsed beams. PTE, no. 5, 1971, 42-45.

Konstantinov, A. G., and D. S. Maslennikov. A single half-period charge circuit for powerful high voltage condenser banks. IN: Trudy Ural'skogo politekhnicheskogo universiteta, Sbornik 191, 1970. 134-140.

Koval'chuk, B. M., V. V. Kremnev, G. A. Mesyats, and Yu. F. Potalitsyn. Discharge in a high pressure gas initiated by a beam of fast electrons. ZhPMTF, no. 6, 1971, 23-29.

Kudelaynen, V. I., I. N. Meshkov, and R. A. Salimov. Forming an intense electron beam in a magnetic field. ZhTF, no. 11, 1971, 2294-2296.

Lomize, L. G., B. P. Murin, and L. L. Filipchikov. Beam loading in linear accelerators of charged particles, as a function of beam parameters with respect to the resonator field. IN: Trudy radiotekhnicheskogo instituta AN SSSR. No. 2, 1970, 36-59.

Lyakhno, Yu. P., and V. A. Nikitin. Absolute measurement of intensity in particle beams by a fluctuation method. Atomnaya energiya, no. 8, 1971, 164-165.

Mesyats, G. A., E. A. Litvinov, and D. I. Proskurovskiy. High-speed processes during pulse breakdown of vacuum gaps. IN: Proceedings of the 4th International Symposium on Discharges and Electrical Insulation in Vacuum, Waterloo, Ontario, Canada, 1-4 Sept. 1970. Waterloo, Ontario, University of Waterloo, 1970, 82-95.

Mitin, R. V., and V. P. Kantsedal. Study of the dense plasma in high pressure arcs. IN: An UkrSSR. Fizika plasmy i problemy upravlyayemogo termoyadernogo sinteza. Kiyev, naukova dumka. No. 1, 1971, 213-226.

Murin, B. P., B. I. Polyakov, L. G. Lomize et al. Stabilization of high frequency fields in linear ion accelerators using intense pulsed beams. IN: Trudy radiotekhnicheskogo instituta AN SSSR. No. 2, 1970, 16-35.

Nagaybekov, R. B. Ionization processes and ion supercharge in the cathode spot of a vacuum arc discharge. ZhTF, no. 11, 1971, 2350-2352.

Namitokov, K. K., D. P. Solopikhin, and I. Ya. Surovtsev. Radiographic study of structural changes in electrodes from the effect of discrete electrical pulse discharges. FiKhOM, no. 6, 1971, 11-16.

Naugol'nik, K. A. Calculating the mode of an electrical discharge in fluid. IN: Trudy akusticheskogo instituta. No. 14, 1971, 136-143.

Nekrashevich, I. R., and A. I. Bushyk. Character of erosional tracks on electrodes with a complex surface structure, during a high current discharge. VAN BelorSSR. Seriya fizika-matematychnykh navuk, no. 6, 1971, 95-98.

Neretina, N. A., N. N. Druzhinina, and B. N. Klarfeld. Anode region in a low-pressure mercury discharge with pinch effect. IN: 9th International Conference on Phenomena in Ionized Gases, Bucharest, 1-6 September 1969, 160.

Perevodchikov, V. I., A. L. Fedorov, and K. A. Yumatov. Pulsed electron gun with currents up to 1 ka. UFZh, v. 16, no. 6, 1971, 971-976.

Perevodchikov, V. I., and L. P. Shanturin. Factors in the formation of powerful c-w electron beams in the 10^{-5} to 10^{-3} torr range. UFZh, v. 16, no. 6, 1971, 987-991.

Suladze, K. V., B. A. Tskhadaya, and A. A. Plyutto. Factors in forming intense electron beams in a confined plasma. UFZh, v. 16, no. 6, 1971, 992-994.

Petrenko, V. I., R. V. Mitin, Yu. P. Knyazev, and A. V. Zvyagintsev. High current pulsed arc in hydrogen at pressures up to 400 atmospheres. IN: AN UkrSSR. Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza. Kiyev, naukova dumka. No. 1, 1971, 226-230.

Petrosyan, M. L. Beam loading of a linear accelerator. Izv Arm, no. 6, 1971, 312-314.

Pryadkin, K. K., R. V. Mitin, and N. N. Klimov. Electrodeless discharge in xenon at pressures up to 40 atmospheres. IN: AN UkrSSR. Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza. Kiyev, naukova dumka. No. 1, 1971, 226-230.

Shchepetov, V. N. Characteristics of material dispersion from the action of pulsed electron beams. FiKhOM, no. 6, 1971, 93-96.

Ternov, I. M., V. G. Bagrov, Yu. I. Klimenko, O. S. Pavlova, and V. R. Khalilov. Stimulated emission from relativistic electrons moving in a plane low intensity wave. VMU, no. 6, 1971, 691 - 695.

Vizir', V. A., and M. M. Nikitin. Measuring the frequency of coherent oscillations of an electron beam in a synchrotron. PTE, no. 5, 1971, 37-38.

Volkov, B. I., A. G. Sveshnikov, and N. N. Semashko. On determining the form of the plasma emitter in an accelerating electric field. DAN, v. 201, no. 4, 1971, 806-808.

Voronin, V. S., and A. N. Lebedev. Self-similar model of a tubular electron beam. KSpF, no. 5, 1971, 39-46.

Vyatskin, A. Ya., A. N. Kabanov, Yu. M. Kushnir, and V. V. Trunev. Transmission, reflection and absorption of powerful electron beams in thin films of aluminum.

Zykov, A. N., G. D. Kramskoy, and G. L. Fursov. Experimental study of methods for increasing the limit current in a linear electron accelerator. PTE, no. 5, 1971, 28-32.

V. Biocybernetics

Aleyev, L. S., S. G. Bunimovich, N. I. Gol'tsman, and B. Ya. Shpichenetskiy. Study of the possibility of bioelectric control by global movements of the body. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 110-116.

Aleyev, L. S., and A. A. Astryukhin. Experiment in standardizing medical information and the problem of storing it in an electronic computer during the construction of an information retrieval system according to certain classes of neurological diseases. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 204-212.

Amosov, N. M., V. A. Lishchuk, and B. L. Palets. Self regulation of the heart. IN: Kibernetika i vychislitel' naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 116-133.

Amosov, N. M., L. N. Sidarenko, N. G. Zaytsev, A. A. Popov, V. G. Mel'nikov, O. P. Mintser, V. A. Shul'ga, Yu. R. Varenik, and V. P. Starchik. A medical information system. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 217-227.

Anisimova, T. N. Bionika. Bibliograficheskiy ukazatel' otechestvennoy i inostrannoy literatury, 1958-1968 (Bionics. Bibliographical index to domestic and foreign literature, 1958-1968.) Moskva, Izd-vo Nauka, 1971, 167 p.

Ayzenberg, N. N., and A. G. Frantsuz. Pattern recognition in a finite set of descriptors. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 70-74.

Baumgartl, D. Biological principles of some receptors and their utility as models for technical systems. Messen, steuern, regeln, no. 4, 1971, 135-137.

Bansaghi, L., P. Schwarczmann, I. Fenyo, and T. Frey. Quantitative single-purpose computer for the bloodless determination of the minute-volume of the heart. Meres es automatika, no. 3, 1971, 93-98.

Belik, Ya. Ya. Modeling of functional systems of visual space perception under control of various operating systems. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 26-30.

Belyakov, R. V. Role of structure in systems for modeling rhythmic processes. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 134-138.

Biologicheskaya, medintsinskaya kibernetika i bionika (Biological, medical cybernetics and bionics), nos. 2, 3, 4. Kiyev, AN UkrSSR. Nauch. sovet po kibernet., In-t kibernet., 1970 (RZh Kibernetika, 6/71, #6G225K-6G227K)

Branovitskiy, V. N., A. M. Dovgyallo, and Ye. I. Mashbits. Some problems of function distribution between man and computer. IN: Kibernetika i vychislitel'naya tekhnika, no. 4. Biologicheskaya kibernetika. Kiyev, Naukova dumka, 1970, 6-15.

Bratko, A. A. Modeling of psychic activities as a heuristic problem. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 15-24.

Buchmuller, K., and G. Krenzke. Hybrid computer for measurement-value processing in large hospitals. Messen, steuern, regeln, no. 4, 1971, 144-146.

Bugay, Yu. P., and V. G. Chervov. Modeling of excitation processes in some synaptic formations. IN: Problemy bioniki, no. 4, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 8-16.

Bundzen, P. V., B. M. Shishkin. Analysis of automatic control properties of the central nervous system by control theory methods. Fiziologicheskiy zhurnal SSSR, no. 5, 1971, 664-672.

Bykh, A. I., L. V. Voyevoda, and Yu. K. Khudenskiy. A possibility of creating a fast-acting electrochemical neuron model. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 50-53.

Chinayev, P. I., K. A. Ivanov-Muromskiy, A. D. Ryabinin, G. V. Tsepkov, A. M. Shkvar, and A. I. Shevchenko. Conversion of continuous functions by means of artificial neuron nets. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova, dumka, 1970, 186-195.

Diduk, N. N. Algorithmic language for communication between the user of a digital computer and the programmer. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 35-57.

Dyubko, G. F., and V. V. Tishchenko. Mathematical model of a statistical transformation of vibration intensity in vibrational perception. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 50-54.

Dyubko, G. F., and G. S. Yeremin. Mathematical model for converting acoustic information in an auditory analyzer for man. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 114-116.

Frey, T., P. Schwarczmann, P. Kenedy, P. Karpati, and G. Csatari. Models for the computer evaluation of vector cardiograms. Meres es automatika, no. 3, 1971, 107-108.

Gaaze-Rapoport, M. G., and L. A. Pospelov. Some analogies between behavioral structures of biological and technical systems. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 24-30.

Goga, G. G. Visual information input into a digital computer. IN: Problemy bioniki, no. 5, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 7-20.

Golovan', E. T. Model of an associative memory. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 31-35.

Golovan', E. T., and A. N. Luk. Associative net model of memory. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 54-60.

Granovskaya, A. M., and O. Yu. Vorob'yev. A neuron associative memory and the complexity of neurons. IN: Sbornik. Vychislitel'naya tekhnika i voprosy kibernetiki. Izd-vo Moskovskogo universiteta, no. 8, 1971, 107-120.

Ignatenko, Yu. G., and V. A. Lovitskiy. Modeling the process of human evaluation of information. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 60-70.

The invisible at work: automatic control of cultures for growing enzyme producing bacteria . Komsomol'skaya pravda, March 20, 1971, p. 4, cols. 7-8.

Kachko, Ye. G. Problems of using a linear model for mathematical description of visual perception of periodic flashes of brightness. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 63-67.

Karkishchenko, N. N. Change in the intrasystem relationships of the brain under pharmacological action. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 139-147.

Karmos, Gy., J. Martin, and J. Czopf. The importance of the value of signal-noise ratio in computer evaluation of induced brain potential sequences. Meres es automatika, no. 3, 1971, 103-106.

Karpukhina, A. M., and I. D. Ponomareva. Two varieties of functional indicators in the study of respiratory neurons. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova, dumka, 1970, 147-158.

Krayzmer, L. P., and S. G. Mayorkin. Methods for organizing the structure in homogeneous neuroid nets. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 3-8.

Kreyn, I. M. Levels and types of informative contact. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 67-70.

Kreyn, I. M., and N. V. Pavlovich. Informative contact under various code conditions in the generality of concepts. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 71-73.

Kucherov, I. S. Analysis of oscillatory processes in biological systems. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 158-165.

Lesis, V. I., and K. P. Zhukauskas. Simulation of a neural net. 2. The trajectories of the model of the neural net in phase space. Trudy AN LitSSR. Seriya B, no. 1 (64), 1971, 225-230.

Lovitskiy, V. A. Forgetting information. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 73-79.

Luk'yanova, O. N. Change in specific afferentation while performing a reference reflex. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 165-176.

Marchenko, S. F., and V. G. Chervov. Separation of spatial features of images and coding of character information. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 97-100.

Marchenko, S. F. Structure and function of a spatial analyzer. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universitet, 1970, 100-103.

Marchenko, S. F., and V. G. Chervov. An application of biological principles for the automatic analysis of complex geometric images. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 37-43.

Marchenko, Yu. S. Using pathology data from a taste analyzer for machine diagnostics. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 74-78.

Marinov, Yu. P., and P. G. Venkov. Possibility of using the phase interval principle for the automatic recognition of heart sounds and murmurs. Avtomatika i vychislitel'naya tekhnika, no. 2, 1971, 42-49.

Mel'nik, I. M., and P. B. Nevel'skiy. Effect of the number of identification marks on memory. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 78-81.

Meytus, V. Yu. The problem of describing the behavior of an organism in an external medium. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 79-85.

Milev, E. Neutron simulation as a tool of electrophysiology. Messen, steuern, regeln, no. 4, 1971, 140-144.

Mkrtchyan, S. O., and V. I. Potapov. Synthesis of a formal neuron combination summator. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 53-60.

Murashko, A. G., and V. V. Tishchenko. Mathematical model of vibration sensitivity. IN: Problemy bioniki no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 82-85.

Murashko, A. G., and V. V. Tishchenko. Possibility of using mathematical models of vibration sensitivity for determining pathology in a vibration analyzer. IN: Problemy bioniki, no. 5, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 83-91.

Myasnikova, Ye. N. Images and characters in the theory of automatic recognition. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 71-73.

Narushevichus, E. V., V. A. Maginskis, and R. Yu. Zhilyukas. Statistical properties of a neuron discharge and their functional significance. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 176-185.

Nebiyeridze, R. B. Jumping motion of the eye. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 23-26.

Nevel'skiy, P. B. Time and speed of storage. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 91-94.

Nevel'skiy, P. B., and M. D. Rozenbaum. Informational measurements of special languages. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 94-97.

Pinchuk, S. A., P. V. Voloshin, and G. I. Belik. A method for analytical description of rheograms, for processing and analyzing them in a digital computer. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 43-50.

Pommereit, M. Simulation of the transmission conditions of a randomly connected neuron net with stochastic entry exitation. Elektronische Informationsverarbeitung und Kybernetik, no. 2, 1971, 67-78.

Pommereit, M. Sequential information processing on the basis of neural nets with random connections (Report to the Third All-Union congress on bionics, Moscow, May 27-31, 1968). IN: Elektronische Informationsverarbeitung und Kybernetik, no. 2, 1971, 78.

Ponomareva, I. D., and G. V. Tsepkov. Expansion of a continuous function from derivatives and quantization of electrograms. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 61-62.

Pospelov, D. A., V. A. Fedin, and N. I. Chelnokov. Interrelationship of man and computer as an example of "man-automaton" systems. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 86-90.

Putyatin, Ye. P., V. P. Pchelinov, and G. M. Putyatina. Multicomponent technical systems for analyzing optical information. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 26-30.

Putyatin, Ye. P., V. V. Barannik, G. M. Putyatina, and I. V. Shul'gin. Statistical aspects of color shade recognition. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 74-80.

Putyatin, Ye. P., I. V. Shul'gin, V. P. Yurchenko, and O. M. Abramov. Modeling of mechanisms for normalizing visual images. IN: Problemy bioniki, no. 5, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 102-106.

Reissmann, H. C. Application of stochastic signal analysis methods for the study of time-variant biomedical function parameters. Messen, steuern, regeln, no. 4, 1971, 149-152.

Romanov, S. P. Neuron model. Opisaniye izobreteniya k avtorskomu svidetel'stvu, published Nov. 6, 1970, Byulleten' 31, #283700.

Sapozhnikov, R. A. Optimization in spectral sensitivity of the eye. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 3-6.

Serdyuchenko, V. Ya., and A. A. Gal'kevich. Operation of an electron device for studying the inductive properties of vision. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 68-71.

Sereda, G. K., and B. I. Snopik. Transformation and storage of information for brief duration. IN: Problemy bioniki, no. 5, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 81-83.

Shabanov-Kushnarenko, Yu. P., Yu. S. Marchenko, and M. F. Bondarenko. Mathematical description of the functioning of a taste analyzer for man. IN: Problemy bioniki, no. 5. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 20-26.

Shabanov-Kushnarenko, Yu. P. Axiomatic construction of a model of color vision. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 30-50.

Shabanov-Kushnarenko, Yu. P., and Ye. G. Kachko. Mathematical description of the smoothing properties of vision. IN: Problemy bioniki, no. 5, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 91-102.

Shabanov-Kushnarenko, Yu. P., and Ye. G. Kachko. Study of reactions in the Allard-Luizov inertia model for periodic flashes of brightness. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 103-114.

Shabanov-Kushnarenko, Yu. P. An algorithm for basing the inertia and irradiation of human vision. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 195-201.

Sidarenko, L. N., O. P. Mintser, V. P. Satmari, A. A. Popov, V. G. Mel'nikov, V. A. Shul'ga, V. P. Starchik, and S. V. Gorynskaya. Standardized cardiosurgical case history and systems of coding. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 212-217.

Sistemnyye issledovaniya. Yezhegodnik 1970 (Systems research. Yearbook 1970). AN SSSR. Institut istorii yestestvoznaniya i tekhniki. Moskva, Izd-vo Nauka, 1970, 208 p.

Slepchuk, N. S., and K. P. Ivanov. Use of the MIR digital computer in physiological studies (Test on organization of operation and maintenance). Fiziologicheskiy zhurnal SSSR, no. 3, 1971, 457-459.

Smirnov, B. A. Use of a statistical modeling method for studying the activity of a human operator. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 85-91.

Starinets, V. S. Modeling of personality. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 91-107.

Terent'yev, S. N., and V. M. Kutsenko. A pattern recognition algorithm. IN: Problemy bioniki, no. 4. Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 80-82.

Tsepkov, G. V. Multichannel generator for a time-mark system of collecting, converting and processing physiological information. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 227-233.

Vasadze, G. S., V. G. Chatiaschivili, and G. G. Dumdabze. Machine diagnostics and optimal method of treatment. Messen, steuern, regeln, no. 4, 1971, 155-157.

Vishnevskiy, A. A. New ways of using cybernetics and electronics in surgery. Vestnik AMedN SSSR, no. 6, 1971, 46-50.

Zaslavskiy, S. Ya. Analysis of a class of decision systems. IN: Kibernetika i vychislitel'naya tekhnika, no. 4, Kiyev, Naukova dumka, 1970, 57-66.

Zhukova, G. N., L. A. Tenenbaum, and Ye. I. Shafranova. Stop test method in studying movement control processes. Avtomatika i telemekhanika, no. 6, 1971, 84-91.

Zozulya, Yu. I., V. G. Chervov, and Yu. P. Bugay. Mathematical models of the retinal detectors in the eye of a frog. IN: Problemy bioniki, no. 4, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1970, 16-22.

Zozulya, Yu. I., Yu. I. Nefedov, V. G. Chervov, and Yu. P. Bugay. Movement detection in the frog retina. IN: Problemy bioniki, no. 5, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971, 30-37.

ABBREVIATIONS

DAN	Akademiya nauk SSSR. Doklady
DAN B	Akademiya nauk Belorusskoy SSR. Doklady
EOM	Elektronnaya obrabotka materialov
FGiV	Fizika goreniya i vzryva
FiKhOM	Fizika i khimiya obrabotki materialov
FMiM	Fizika metallov i metallovedeniye
FTT	Fizika tverdogo tela
I-FZh	Inzhenerno-fizicheskiy zhurnal
KSpF	Kratkiye soobshcheniya po fizike
LZhSt	Letopis' zhurnal'nykh statey
MZhiG	AN SSSR. Mekhanika zhidkosti i gaza. Izvestiya
PMM	Prikladnaya matematika i mekhanika
PTE	Pribory i tekhnika eksperimenta
RZhKh	Referativnyy zhurnal. Khimiya
RZhKibernetika	Referativnyy zhurnal. Kibernetika
RZhMekh	Referativnyy zhurnal. Mekhanika
TVT	Teplofizika vysokikh temperatur
UFZh	Ukrainskiy fizicheskiy zhurnal
VAN BelorSSR	Akademiya nauk BelorusskoySSR. Vestnik
VMU	Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya
ZhETF	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhPMTF	Zhurnal prikladnoy mekhaniki i teoreticheskoy fiziki
ZhPS	Zhurnal prikladnoy spektroskopii
ZhTF	Zhurnal tekhnicheskoy fiziki