L 15975-66

ACC NR: AT5027128

placement of the meteor was 1 order smaller than its linear size even at the meteor rate of speed of 60-70 km/sec. The meteor image in photographs was then in the form of a bright head and relatively weak tail. The instantaneous exposition of 10^{-3}-10^{-4}sec. could thus provide for an image of the meteor in pure form. In addition, the use of instantaneous exposition permitted the separation of the images of individual meteor fragments, a separate study of the movement of each fragment, and measuring the mass of each fragment. Two factors should be taken into consideration when designing a device for instantaneous exposition: (1) the time of meteor appearance is not known (device should operate for a prolonged time), and (2) the instantaneous image is situated along the meteor flight (separate images should be spaced on the film so that they do not overlap.). Three methods were offered for the instantaneous photographing of meteors: (1) A sufficiently large disk having windows slightly wider than the diameter of the front lense and rotating at the rate of μ revolutions per sec. ($\eta = r/\pi R\mu$, where η is the effective exposition, R is the distance of the light window from the center of the disk, and r is the radius of the window); (2) 2 mobile lattices, each having intermittent transparent and opaque bands; and (3) a special near-film obturator. The latter was devised and is in use now at the Odessa Astronomical

Card 2/3

L 15975-66

ACC NR: AT5027128

Observatory. In this device the disk, having 1 or 2 narrow windows of 5° or 10° (for focal distances of the cameras of 250 or 750 mm) rotates near the focal plane of the objective. The angular speed of the obturator is 1500 rpm. The device is calculated for exposures of 1/900 and 1/1800 sec. At the present research is being conducted in the Odessa Astronomical Observatory for designing of apparatuses with use of electronic-optical converters. Orig. art. has: 2 figures.

SUB CODE: 03,14/SUBM DATE: 25Jun65/ ORIG REF: 003/ OTH REF: 001

bvk

Card 3/3

L 32774-65 EWT(1)/EWG(v)/FCC/EWA(d)/EEC-4/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4/
Pae-2/Peb/Pi-4 GW
ACCESSION NR: AT5009975 UR/3010/65/000/014/0083/0088

AUTHOR: Babadzhanov, P. B., Kashcheyev, B. L., Kramer, Ye. N., Tsesevich, V. P.

TITLE: The study of meteors during the IGY

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. Geofizicheskiy byulleten', no. 14, 1965, 83-88

TOPIC TAGS: IGY meteor study, atmospheric density, wind velocity, meteor incidence, meteor maximum brightness, meteor extinction

ABSTRACT: This is a survey of internationally collected data resulting from meteor observations during the IGY. Graphs are compiled: 1) showing the atmospheric density as a function of height; 2) giving the appearance altitude, maximum brightness altitude, and the disappearance altitude of the meteors as a function of their velocity; 3) comparing the theoretical brightness curves with the experimentally observed values; 4) showing prevalent wind velocity changes within the meteor zone of the atmosphere; and 5) attempting (unsuccessfully) to uncover some definite relation between the logarithm of the diffusion coefficient and the altitude of observation. Soviet observations and calculations were carried out mainly at Dushanbe, Odessa, and the Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnic Institute). Orig. art. has: 2 formulas and 5 figures.

Card 1/2

L 52774-65

ACCESSION NR: AT5009975

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: ES, AA

NO REF SOV: 005 OTHER: 005

Card 2/2

L 5312-66 EWT(1)/EWA(d) GS/GW
ACCESSION NR: AT5024193 UR/0000/65/000/000/0087/0104

27
B+1

AUTHOR: Kramer, Ye. N.

TITLE: Some problems of a theory and new methods of meteor observation

SOURCE: AN UkrSSR. Fizika komet i meteorov (Physics of comets and meteors). Kiev, Izd-vo Naukova dumka, 1965, 87-104

TOPIC TAGS: meteor, meteor observation, comet, astronomic camera

ABSTRACT: Observed decelerations and luminosities of meteors are compared with the theoretical values as applied to a single nonfragmented meteor body. The work was done to illuminate the problem of the nature and distribution of meteor material connected in its origin with comets. Formulas obtained earlier by B. Yu. Levin (Fizicheskaya teoriya meteorov. Izd-vo AN SSSR, 1956) were used, and the obtained values were compared with data from observations at Odessa and Harvard University. It was found that the observed and theoretical deceleration indices agree qualitatively, but the observed value is almost always somewhat higher. The observed luminosities (visual radiation energy) are lower than the theoretical. It is concluded that the present photographic methods do not provide a final solution to the problem of the nature of meteor fragmentation. A method of instantaneous exposure is proposed to help in removing some of these defects. The Odessa Astronomical

Card 1/2

0901 0551

L 5312-66
ACCESSION NR: AT5024193

Observatory uses cameras with special shutters (disks with one or two slits of 5 or 10^{0} that rotate near the focal plane at 25-50 rpm) providing an exposure of 1/900-1/1800 sec. Tabulated heliocentric elliptical coordinates of the nodal points of comet orbits are given for aid in studying the relationship between meteor showers and comets. Orig. art. has: 2 tables and 17 formulas.

ASSOCIATION: GAOANUK

SUBMITTED: 21May65 ENCL: 00 SUB CODE: AA

NO REF SOV: 009 OTHER: 008

Card 2/2

L 48208-65 EWT(1)/EWG(v)/EWA(d)/EEC-4/EEC(t) Pe-5/Pae-2 GW UR/0203/65/005/002/0269/0275

ACCESSION NR: AP5010269

AUTHOR: Vorob'yeva, V.A.; Kramer, Ye.N.

TITLE: Deceleration of meteors

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 2, 1965, 269-275

TOPIC TAGS: meteor shower, meteor deceleration, meteor orbit, homogeneous atmosphere

ABSTRACT: Photographic observations of meteorites were used to study the deceleration of meteors in the earth's atmosphere and to compare the measured values with the theoretical. Observations made in Massachusetts and New Mexico were used, as well as those of 26 meteors recorded in Odessa, for which good-quality pictures were available. The atmospheric trajectories of these meteors were computed. A relation was derived, making it possible to calculate the extra-atmospheric velocity of a meteor from its velocity and deceleration, which are established at the point of maximum brightness. Based on the meteor data, a relationship was established between the altitude of the homogeneous atmosphere and the altitude above sea level; in the altitude range of 60 to 100 km, the altitude of the homogeneous atmosphere and hence the temperature remain almost the same, but on the basis of the average value obtained from the observations, the altitude

Card 1/2

L 48308-65

ACCESSION NR: AP5010269

2

of the homogeneous atmosphere was found to be 1.5 to 2 km above the data for the standard atmosphere. In computing the orbits of the individual meteors from radio tracking observations, the authors worked out a technique for passing from observational data to the extra-atmospheric velocity. Orig. art. has: 5 figures, 1 table, and 20 formulas. [08]

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University); Odesskaya astronomicheskaya observatoriya (Odessa Astronomical Observatory)

SUBMITTED: 13Apr64 ENCL: 00 SUB CODE: AA

NO REF SOV: 004 OTHER: 002 ATD PRESS: 3254

Card 2/2

L 44798-65 EWT(1)/EWG(v)/EWA(d)/EEC-4/EEC(t) Pe-5/Pae-2 GW

ACCESSION NR: AP5010270 UR/0203/65/005/002/0276/0283

AUTHOR: Kramer, Ye. N.

TITLE: Pulverization of meteors

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 2, 1965, 276-283

TOPIC TAGS: meteoric velocity, meteoric brightness, emission energy, photoelectric investigation, meteoric tail, microscopic dust

ABSTRACT: The fundamental parameters of a meteor are its velocity and brightness. Both parameters vary in time depending upon the height of the meteor. The energy emitted during the visible flight may be computed by a special formula. This formula does not take into consideration the crushing effect, so the computed curve does not agree with the curve obtained from observation data. A special parameter Π is introduced which is equal to the ratio of the difference between the computed energy of emission and the observed emission to the computed energy. Data for computations were taken from observations at Odessa Astronomical Observatory and Harvard University (U.S.A.). The majority of observation data yielded a positive Π, which means that this parameter characterizes the nonemitted mass of the meteor. Photoelectric investigations revealed the existence of a meteoric tail, which must

Card 1/2

L 44798-65
ACCESSION NR: AP5010270

be composed of dust, because ionized atoms and molecules recombine and disappear gradually. During the flight, particles are ejected from the meteor surface, and the meteor crumbles into dust. The emission energy of meteors from the height of their appearance to the height of disappearance was computed from observational data obtained at the Odessa Astronomical Observatory. Analysis of these results showed that about 30—50% of meteoric matter remains in the atmosphere as microscopic dust. Orig. art. has 1 table, 4 figures, and 22 formulas. [EG]

ASSOCIATION: Odesskaya astronomicheskaya observatoriya (Odessa Astronomical Observatory)

SUBMITTED: 16Apr64 ENCL: 00 SUB CODE: AA

NO REF SOV: 005 OTHER: 006 ATD PRESS: 3256

Card 2/2

KRAMER, Ye.N.; [redacted], O.A.

Photographic observations of the Perseids. Astron.zhur. 42 no.2:416-423 Mr-Ap '65. (MIRA 18:4)

1. Odesskaya astronomicheskaya observatoriya.

BABADZHANOV, P.B.; KRAMER, Ye.N.

Preliminary results of photographing meteors by the instantaneous exposure method. Astron. zhur. 42 no.3:660-664 My-Je '65. (MIRA 18:5)

1. Institut astrofiziki AN Tadzhikskoy SSR i Odesskiy gosudarstvennyy universitet im. I.I.Mechnikova.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000826020018-4"

ACC NR: AP7008916

SOURCE CODE: UR/0033/66/043/006/1306/0312

AUTHOR: Babadzhanov, P. B.; Kramer, Ye. N.

ORG: Astrophysics Institute, AN TadzhSSR (Institut astrofiziki AN TadzhSSR); Odessa State University (Odesskiy gos. universitet)

TITLE: Orbits of bright meteors from photographic observations at Dushanbe and Odessa

SOURCE: Astronomicheskiy zhurnal, v. 43, no. 6, 1966, 1306-1312

TOPIC TAGS: meteor observation, comet

SUB CODE: 03

ABSTRACT:

The photographic observations of meteors whose results are presented in this paper were made during the period 1957-1963 using cameras with objectives D = 100 mm, F = 250 mm and a field of view 40 x 50°. Panchromatic film was used (width 19 cm). Exposures were from 30 to 60 minute. Observations were at Dushanbe and Odessa. The following information is given for about 500 meteor observations: determination of time of flight; distribution of orbital elements; semimajor axis; orbital inclination; eccentricity; etc. Particular attention is given to meteor associations, especially the Perseids. The photographic observations of bright meteors confirmed their relationship to comets. The meteor bodies and comets have the same kinematic properties. According to Whipple's K criterion most orbits of bright meteors are of the cometary class. The identification of meteors for which K > 0 with asteroids has no adequate basis because no single kinematic criterion can be used in drawing reli-

Card 1/2

UDC: 521.75.15

0929 1731

ACC NR: AP7008916

able conclusions concerning the genetic relationship of meteors to asteroids or comets. The distribution of the orbital elements for bright meteors differs in some respects from those for "faint" meteors. On the average the bright meteors move along more elongated orbits and the inclinations of these orbits are greater on the average than those of faint meteors. Orig. art. has: 6 figures, 1 formula and 2 tables. [JPRS: 39,718]

Card 2/2

BARANOV, V.F.; KOLOBASHKIN, V.M.; KRAMER-AGEYEV, Ye.A.

Energy calculation of a beta spectrometer containing no iron and a transverse magnetic field. Sbor. nauch. rab. MIFI no.2:121-125 '60. (MIRA 14:3)

(Beta-ray spectrometer)

27695
S/120/61/000/003/005/041
E032/E314

26.2263

AUTHORS: Stolyarova, Ye.L., Kramer-Ageyev, Ye.A. and Fedorov, G.A.

TITLE: A Scintillation Spectrometer for Fast Neutrons with a Boron-containing Organic Scintillator

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No. 3, pp. 49 - 51

TEXT: The principle of the instrument is as follows. A fast neutron entering a scintillator may produce a number of recoil protons as a result of multiple scattering (in a time of the order of 10^{-8} sec). Having been slowed down to less than 10 keV, it is captured by B^{10} nuclei. The capture is accompanied by the emission of an α-particle which gives rise to a second pulse (on the average 2.2 μs after the first pulse). Using the delayed coincidence technique and the amplitude analysis of the pulses, one can determine the energy of the incident neutrons. In the arrangement employed by the present authors, pulses from the anode of a photo-

Card 1/5

27695
S/120/61/000/003/005/041
E032/E314

A Scintillation Spectrometer ....

multiplier are amplified and then fed into the "alpha" and "proton" channels. The pulses in the proton channel are, on the average, delayed by 2.2 μs. Pulses from the output of the coincidence circuit, which are due to coincidences between the "alpha" and "proton" channel pulses trigger a univibrator which produces a 100 V output pulse. This pulse is used as the gating pulse for a kicksorter (АИ-100-1 (AI-100-1)). At the same time, the pulses taken from the eighth dynode of the photomultiplier are amplified and amplitude-analysed. The scintillators employed were:

1) p-terphenyl plus o-xylol plus trimethylborate (d = 4 cm; h = 4 cm);

2) p-terphenyl plus toluol plus trimethylborate (d = h = 8 cm).

The authors carried out a theoretical calculation of the efficiency of the spectrometer, assuming that in each i-th scattering the energy of the neutron is reduced to $E_{i+1} = E_i \exp(-\zeta)$, where ζ is the average logarithmic energy loss. The neutron slowing-down time was taken into

Card 2/5

27695

A Scintillation Spectrometer S/120/61/000/003/005/041
E032/E314

account (elastic scattering with C^{12} and H^1 nuclei). In the calculation, the cylindrical scintillator was replaced by an equal sphere, beginning with the second scattering. The computed efficiency curves were found to be in good agreement with experimental data (N.A. Vlasov - Neutrons, 1955, Gostekhizdat). The major advantage of the spectrometer is the relatively high efficiency. Fig. 1 shows the efficiency as a function of neutron energy (MeV). The two curves refer to the two phosphors mentioned above. The efficiency for Curve 1 is multiplied in the figure by a factor of 3. The efficiency at 15, 8.65 and 4.65 MeV on this curve is 0.12, 0.60 and 2.23%. A disadvantage of the spectrometer is the relatively low resolution and a considerable spurious coincidence background. A preliminary description of this apparatus was given by the first of the present authors et al in Ref. 3 (Peredovoy nauchno-tekhnicheskiy i proizvodstvennyy opyt, No. P-58-161/7). It was developed during the period 1957-1958 at the Moscow Engineering Physics Institute.

Card 3/5

27695
S/120/61/000/003/005/041
E032/E314

A Scintillation Spectrometer ....

There are 4 figures and 6 references: 3 Soviet and 3 non-Soviet. The three English-language references quoted are:
Ref. 1 - R.C. Marshall - Phys. Rev., 1953, 79, 896;
Ref. 2 - W.H. Campbell, I.I. Kopkins - Phys. Rev., 1953, 91, 224;
Ref. 6 - F.D. Brooks - Nucl. Instr. and Meth., 1959, 4, 3.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering-physics Institute)

SUBMITTED: June 7, 1960

Card 4/5

45446

S/892/62/000/001/008/022
B102/B186

26 2240

AUTHORS: Kramer-Ageyev, Ye. A., Mashkovich, V. P.

TITLE: Dose distribution of fission neutrons in certain protective materials

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 1, 1962, 57-65

TEXT: The neutron dose distribution characteristics were determined for a series of materials, under the assumption that the following four groups contribute to the dose: (1) thermal neutrons with $E > 1$ ev; (2) slow neutrons with $1 \text{ ev} < E < 100$ ev; (3) intermediate neutrons with $100 \text{ ev} < E < 0.5$ Mev and (4) fast neutrons with $E > 0.5$ Mev. The doses are determined from flux measurements: $D(r) = \int_{E_i}^{E_{i+1}} \phi(r,E) \cdot \eta(E) dE$ with $\phi(r) = \int_{E_i}^{E_{i+1}} \phi(r,E) dE$ - ($\phi(r,E)$ being the flux). For water the dose spectral distribution was determined from experimental data taken from US

Card 1/2

S/892/62/000/001/008/022
B102/B186

Dose distribution of fission ...

publications (Aronson, US AEC, Rep.NYO-6267,1954; Beckurts, Nucl.Instrum. and meth.,11,no.1,144,1961; Aronson et al. US AEC,Rep.NYO-6269,1954). An analysis of the curves obtained shows that the fast neutrons contribute most to the dose - e.g. at r=90 cm the dose due to the fast flux is ten times as great as the dose due to the intermediate flux, and 100 times that of the slow neutrons. The dose spectra obtained similarly for carbon show that for thicknesses $\geqslant$ 50-60 g/cm^2 virtually the whole dose is due to thermal neutrons; in less thick shields fast neutrons also make a significant contribution. The dose spectra for concrete show that concrete behaves more like water than like carbon. The low-energy groups, however, differ less from the fast component than in water. The main groups are, therefore: for water - the fast, for carbon - the thermal, for concrete - the fast, intermediate and thermal, and for iron - the intermediate group (D. Wood, Nucl.Sci.Engng.,5,45,1959). There are 7 figures and 1 table.

Card 2/2

S/892/62/000/001/020/022
B102/B186

AUTHORS: Kramer-Ageyev, Ye. A., Troshin, V. S.

TITLE: A time-of-flight microsecond spectrometer

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 1, 1962, 131-136

TEXT: A time-of-flight spectrometer is described which is designed for investigating intermediate-neutron spectra in the ranges 1 - 25 μsec and $10^2 - 10^5$ ev. The pulsed source used had a frequency of 100 cps. The spectrometer can operate with two types of transmitters: with СНМ-3 (SNM-3) boron counters, and with a lithium glass scintillator or a Т-1 (T-1) scintillator. The counter pulses are fed via a cathode follower and a cable to the dscriminating amplifier "Siren'" and then to the time analyzer. Whereas the pulses from the counters have amplitudes from 0.1 to 0.01 v, those from the scintillators plus ФЭУ-29 (FEU-29) photomultipliers reach 12 v and have periods of 10-15 μsec, due to parasitic processes in the FEU. A reduction of the accelerating potential is not sufficient for blanking; a barrier potential has to be laid on the dynode

Card 1/2

A time-of-flight microsecond ... S/892/62/000/001/020/022
B102/B186

so that the fast electrons are slowed down sufficiently and cannot cause secondary emission. Considering the great difference in pulse amplitudes, the preamplifier's input and output were provided with dynode limiters. The recording was small. Start pulse and transmitter pulse are fed via two channels and phase-inverters to the differentiating RC - circuit, then to flip-flop oscillators (140 v, 30 μsec) and via a White cathode follower to the mixer. The pulses going through the dynode discriminator and a cathode follower are integrated by an RC-circuit. The linearity of this circuit is not below 5%. The subsequent differentiating chain determines the time intervals between flip-flop oscillator period and time-of-flight with a 5% accuracy. After having passed through an М-500(M-500) amplifier the pulses are finally fed into an АИ-100 (AI-100) pulse-height analyzer. The total error of time analyzing does not exceed 7%. There are 3 figures.

Card 2/2

S/796/62/000/003/009/019

AUTHORS: Kramer-Ageyev, Ye.A., Sakharov, V.K.

TITLE: A scintillation γ-dosimeter.

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Pribory i metody analiza izlucheniy. no.3. 1962, 89-98.

TEXT: An attempt is made to overcome the basic defect of high-sensitivity radiometers, namely, the variation of their readings - at a given constant dosage rate - with varying γ-radiation energy. It is intended that dosage rates of the order of 0.8 mcurie/sec be measured with a summary error of not more than 10-20%. The portable sensor portion of the device consists of a photomultiplier and a combined scintillator. A plastic scintillator (p-terphenyl in polystyrene), 40-mm diam, 6 mm high, is employed. Its high H content renders it closer to tissue-equivalent than to air-equivalent. The instrument that measures the energy absorption in the scintillator is calibrated for Co^{60} or Ra γ-radiation and, hence, is greatly energy-dependent, especially at energies below 100 kev, at which the nonlinearity of the conversion effectiveness of organic scintillators is also appreciable. Various attempts to reduce the energy dependence by use of homogeneous mixtures are discussed and criticized; the use of a small pack of KI(Tl) crystal, 2x2x0.25 mm, attached to the outer surface of the plastic scintillator, was tested and is recommended. The sensor can be removed several meters from the measuring console and

Card 1/2

A scintillation γ-dosimeter. S/796/62/000/003/009/019

the ПС-10,000 (PS-10,000) instrument. The steel shell of the sensor comprises the photomultiplier and the combined scintillator. A paper-covered frontal aperture and two opaqued side windows serve to admit low-energy γ-quanta without excessive absorption in the shell material. The divider of the ФЭУ-29 (FEU-29) photomultiplier is uniform. The photomultiplier is fed from the PS-10,000 instrument. The photomultiplier anode is connected directly to the cable between the sensor and the console; at the console end the cable is loaded with a 100-kohm resistance. The general console circuitry consists of two independent portions, namely, a d.c. amplifier and a pulse-amplitude transformer. The general circuitry is depicted in a full-page schematic circuit diagram and is discussed in detail. The characteristic of the dosimeter, which was calibrated with γ-radiation from a Ra standard source, was tested in the low-energy range with a strongly filtered X radiation and correlated against an air-chamber standard. A severe variation occurred only in the energy range between 30 and 53 kev, with near-constancy (± 5%) from 0.053 to 10 mev. The instrument was also tested for isotropicity by exposure to the γ-rays of a Co^{60} source; an 8% lower reading was obtained with a glancing impingement than with a normal impingement. The anisotropy may be greater possibly at smaller γ-ray energies. Load (dosage-rate) tests manifest an upper limit of 5 mcurie/sec for this dosimeter, with a sensitivity of $1.9 \cdot 10^{10}$ pulses per r. In effect, the instrument is a combined roentgenometer and dosimeter. 5 figures, 5 references (2 Russian-language Soviet, 2 Russian transl. of U.S. compendia, 1 German paper).

ASSOCIATION: None given.

Card 2/2

KRAMER-AGEYEV, YE. A.

95

S/089/62/013/006/019/027
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inzhenerno-fizicheskogo instituta (Scientific Conference of the Moscow Engineering Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400 delegates participating. A review is given of these lectures that are assumed to be of interest for the readers of Atomnaya energiya. They are following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev, design of accelerators for superhigh energies; I. Ya. Pomeranchuk, analyticity, unitarity, and asymptotic behavior of strong interactions at high energies; A. B. Migdal, phenomenological theory for the many-body problem; Yu. D. Fiveyskiy, deceleration of medium-energy antiprotons in matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect; M. I. Ryazanov, theory of ionization losses in nonhomogeneous medium; Yu. B. Ivanov, A. A. Rukhadze, h-f conductivity of subcritical plasma;

Card 1/4

36

Nauchnaya konferentsiya...

S/089/62/013/006/019/027
B102/B186

Ye. Ye. Lovetskiy, A. A. Rukhadze, electromagnetic waves in nonhomogeneous plasma; Yu. D. Kotov, I. L. Rozental', the origin of fast cosmic muons; Yu. M. Ivanov, muon depolarization in solids; V. G. Varlamov, Yu. M. Grashin, B. A. Dolgoshein, V. G. Kirillov-Ugryumov, V. S. Roganov, A. V. Samoylov, μ^- capture by various nuclei; V. S. Demidov, V. G. Kirillov-Ugryumov, A. K. Ponosov, V. P. Protasov, F. M. Sergeyev, scattering of π^- mesons at 5 ÷ 15 Mev in a propane bubble chamber; S. Ya. Nikitin, M. S. Aynutdinov, Ya. M. Selektor, S. M. Zombkovskiy, A. F. Grashin, muon production in π^-p interactions; B. A. Dolgoshein, spark chambers; N. G. Volkov, V. K. Lyapidevskiy, I. M. Obodovskiy, study of operation of a convection chamber; K. G. Finogenov, production of square voltage pulses of high amplitudes; G. N. Alekseakov, problems of color vision; V. K. Lyapidevskiy, relation between number of receivers and number of independent colors; Ye. M. Kudryavtsev, N. N. Sobolev, N. I. Tizengauzen, L. N. Tunitskiy, F. S. Fayzulov, determination of the moment of electron transition of oscillator forces and the widths of the Schuhman-Runge bands of molecular oxygen; B. Ye. Gavrilov, A. V. Zharikov, V. I. Rayko, decomposition of the volume charge of intense ion beams; Ye. A. Kramer-Ageyev, V. S. Troshin, measurement of neutron spectra; G. G. Doroshenko, new methods of fast-neutron recording; V. I. Ivanov, dosimetry terminology; R. M. Voronkov,

Card 2/4

ACCESSION NR: AT4021256 S/2892/63/000/002/0091/0099

AUTHOR: Kramer-Ageyev, Ye. A., Mashkovich, V. P.

TITLE: Shielding of laboratory neutron sources

SOURCE: Voprosy* dozimetrii i zashchity* ot izlucheniy, no. 2, 1963, 91-99

TOPIC TAGS: neutron source, shield, attenuation, water shield, neutron radiation, nomograph, energy distribution, radiometer, γ radiation, paraffin shield

ABSTRACT: The basic characteristics of neutron sources in the (α,n) reaction are given. Nomographs for calculating a water shield from isotropic neutron point sources are drawn. Four types of nomographs are plotted according to the design of a γ radiation shield. The authors claim that the calculated nomographs are correct for an infinite water medium. A paraffin shield can be of 1.2 times less thickness than the water shield, defined by the nomographs. In conclusion, the authors point out that neutron radiation accompanies the source γ radiation. Therefore, the suitability of the selected water or paraffin thickness must be checked from the viewpoint of protection against γ radiation. Analytic results dictate the introduction of heavy components into the shielding content. Orig. art. has: 7 figures and 2 tables.

Card 1/1

Moscow Engineering-Physics Inst.

ACCESSION NR: AT4021262 S/2892/63/000/002/0137/0139

AUTHOR: Kramer-Ageyev, Ye. A.

TITLE: Calculation of the spectrum of neutrons reflected from a protective barrier

SOURCE: Voprosy* dozimetrii i zashchity* ot izlucheniy, no. 2, 1963, 137-139

TOPIC TAGS: neutron, shield, albedo, fission neutron, neutron delay, delay density

ABSTRACT: The author claims that an analysis of the formula proposed by Prais, Kharton, and Spinni (Zashchita ot yaderny*kh izlucheniy. M., Izd-vo inostr. lit., 1959) for calculating the albedo of a delaying medium is only partially valid. According to the author, it is no less important to obtain data on the spectrum of neutrons reflected from a protective barrier. Assuming that a flat barrier is bombarded by a parallel, continuous flux of neutrons, the author arrived on a formula which expresses the delay density at a point on the barrier boundary. The calculations are shown in graphs. The graphs are for three media, graphite, concrete, and water. In conclusion, the author claims that graphite gives the least reflection, but the spectrum is the hardest. The albedo spectrum in the intermediate region is more rigid than the spectrum in the same region of the directly passed neutron radiation. With an increase of lethargy, the thickness of the "illuminating layer"

ACCESSION NR: AT4021262

increases. The error of this method by analogy with the directly passed radiation does not exceed 30%. Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Physics and Engineering Institute)

SUBMITTED: 00 DATE ACQ: 06Apr64 ENCL: 00

SUB CODE: NS, PH NO REF SOV: 000 OTHER: 002

Card 2/2

S/2892/63/000/002/0140/0145

ACCESSION NR: AT4021263

AUTHOR: Kramer-Ageyev, Ye. A.

TITLE: Calculation of the spectral distribution of intermediate neutrons exiting from protective barriers

SOURCE: Voprosy* dozimetrii i zashchity* ot izlucheniy, no. 2, 1963, 140-145

TOPIC TAGS: spectral distribution, neutron, graphite, water, concrete, shield, age theory

ABSTRACT: An attempt is made in this paper to determine the amount of shielding during the calculation of the spectrum of delayed neutrons, for protective means of graphite, water, and concrete. Based on a mathematical argument derived from the erf-function, the author constructed a formula for the calculation of spectral distribution of intermediate neutrons. A homogeneous medium with a constant scattering cross section is assumed in the formula. Based on this formula, the author plotted a graph showing the delay density of neutrons of a constant source (fig. 1). The region from 0 to 9 on the lethargy scale is studied. In the case of large shield thicknesses in the soft region of the spectrum, the age theory minimizes the value of the flow by 30% (data was standardized at E = 0.33 MeV). Orig. art. has: 5 figures and 3 formulas.

Card 1/2

ACCESSION NR: AT4021263

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Physics and Engineering Institute)

SUBMITTED: 00 DATE ACQ: 06Apr64 ENCL: 01

SUB CODE: NS, PH NO REF SOV: 002 OTHER: 002

Card 2/3 2

L 17582-63 EPF(n)-2/EWT(m)/BDS AFFTC/ASD/ESD-3/SSD Pu-4 DM

ACCESSION NR: AP3005227 S/0089/63/015/002/0160/0161

63

AUTHORS: Kramer-Ageyev, Ye. A.; Mashkovich, V. P.

TITLE: Charts for computation of water protection from (Alpha, n)-source neutrons.

SOURCE: Atomnaya energiya, v. 15, no. 2, 1963, 160-161

TOPIC TAGS: (Alpha, n)-source neutron, Po, Be, Gamma radiation.

ABSTRACT: Water or paraffin are mostly used for protection from neutrons emitted by (Alpha, n) sources. Charts are given in this study for water protection from neutrons from joint sources. The charts for the Po-Alpha-Be and Po-Alpha-B sources relate the yield of the source (neutrons s/sec), the distance from the source to the worker (in cm), and the thickness of the required water layer (in cm), and the thickness of the required water layer (in cm). The chart was computed for daily irradiation of 6 hours, under the assumption of 0.1 biological rad. equiv. per week as a permissible dose. Since the neutron radiation is accompanied by Gamma radiation, the selected water thickness must also be checked for protection from Gamma radiation. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: none

Card 1/2

ACCESSION NR: AR4043993 S/0058/64/000/006/A045/A045

SOURCE: Ref. zh. Fizika, Abs. 6A415

AUTHOR: Stolyarova, Ye. L.; Kramer-Ageyev, Ye. A.; Fedorov, G. A.

TITLE: A fast-neutron spectrometer with organic boron scintillator

CITED SOURCE: Sb. Stsintillyatory* i stsintillyats. materialy*. Khar'kov, Khar'kovsk. un-t, 1963, 167-169

TOPIC TAGS: fast neutron spectrometer, scintillator, organic boron scintillator

TRANSLATION: Examines the principle of operation of a fast-neutron spectrometer with an organic boron scintillator. For two such scintillators, gives calculations of the efficiency for various incident-neutron energies. The first scintillator is a solution of 4 g/l p-terphenyl in an equal mixture of trimethyl borate and o-xylene; the second is a solution of 4 g/l of p-terphenyl in an equal mixture of toluene and trimethyl borate. The diameter and height of the container of the first

Card 1/2

ACCESSION NR: AR4043993

scintillator was 40 mm, of the second--80 mm. The calculation results are given in the form of graphs. Gives experimental neutron spectra of the Po-Be source obtained using each of these scintillators. Discusses the advantages of fast-neutron spectrometers with organic boron scintillator compared with other types of spectrometers.

SUB CODE: NP, OP ENCL: 00

Card 2/2

ACCESSION NR: AT4021270 S/2892/63/000/002/0185/0190

AUTHOR: Kramer-Ageyev, Ye. A., Troshin, V. S.

TITLE: Response delay time in proportional counters

SOURCE: Voprosy* dozimetrii i zashchity* ot izlucheniy, no. 2, 1963, 185-190

TOPIC TAGS: proportional counter, response time, BF_3, neutron spectrum, SNM-5, α particles, scintillation counter, differential analyzer, jitter

ABSTRACT: The use of proportional counters in installations connected with time interval measurements can lead to substantial errors in the impulse delay at the output of the counter relative to the moment of registration. In order to correct this situation, the authors conducted a number of experiments using a counter of the SNM-5 type filled with boron trifluoride to a pressure of 250 mm Hg, cathode diameter 3.5 cm, and an anode filament of 0.005 cm. The time necessary for the electrons to drift to the filament also determines the delay time (jitter). The experimental installation is given in a block diagram. The width of the analyzer window is selected so as to include the pulse amplitude region, which corresponds to the photo peak and the Compton peak. The schematic of a single channel differential analyzer with a stable response time is given. An increase in the

ACCESSION NR: AT4021270

length of delay with the increase of voltage on the counter, as well as the change of the distribution shape are found. The authors determined magnitude of the electron mobility in BF_3 to be equal to 1.0×10^5. The obtained jitter pattern determines the proper resolution of spectrometers in transit time with boron counters and allows the corresponding processing of the spectra to be introduced. Orig. art. has: 5 figures.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Physics and Engineering Institute)

SUBMITTED: 00 DATE ACQ: 06Apr64 ENCL: 00

SUB CODE: SD, NS NO REF SOV: 000 OTHER: 002

Card 2/2

L 24407-65 EWT(m) DIAAP

ACCESSION NR: AT5003276 S/2892/64/000/003/0012/0015

19
B+1

AUTHOR: Kramer-Ageyev, Ye. A.; Troshin, V. S.

TITLE: Spectrum of photoneutrons from uranium targets

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 12-15

TOPIC TAGS: neutron spectrum, photoneutron spectrum, uranium target, effective cross section method, neutron detector, radiation dosimetry

ABSTRACT: There are only a few data concerning the spectrum of photoneutrons from uranium targets. The present paper deals with fast neutrons from U targets shielded by 5 cm of lead. The integral spectrum of such photoneutrons is shown in Fig. 1 of the Enclosure. The U nuclear temperature is assumed to be 1.5 Mev; measurements were carried out along the 30 Mev linear electron accelerator beam. The experimental points are in fair agreement with the theoretical calculations (solid curve in Fig. 1) obtained using the equation $F(E_n) \sim E_n e^{-\frac{E_n}{\theta}}$, established earlier by V. Emma for Bi targets (Nuovo cimento, XVII, no. 3, 365, 1960). Here, $F(E_n)$ is the relative number of neutrons per unit of energy; E_n is the neu-

Card 1/3

L 24407-65

ACCESSION NR: AT5003276

tron energy, in Mev; and θ is the nuclear temperature in Mev. The neutron spectrum could be determined only by the method of effective cross section. Consequently, the article contains a table of affective threshold cross sections and the results of spectrum measurements for the P, NH_4PO_4, A. and Mg detectors {(n, p) reaction} and the Al detector {(n, α) reaction}. Orig. art. has: 4 formulas, 2 figures, and 1 table.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 01 SUB CODE: NP

NO REF SOV: 000 OTHER: 003

Card 2/3

L 23789-65 EWG(j)/EWT(m)/EWP(j)/EWA(h)/EWA(1) Pc-4/Peb RM

ACCESSION NR: AT5003291 S/2892/64/000/003/0106/0109

AUTHOR: Kramer-Ageyev, Ye. A.; Sedin, G. Z.

TITLE: Portable dosimeter for intermediate neutrons

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 106-109

TOPIC TAGS: intermediate neutron, neutron dosimeter, portable neutron dosimeter, moderator dosimeter

ABSTRACT: J. Smith (SM 36/59. Contribution to the symposium on neutron dosimetry, London, 1963) used Baggon's dosimeter (J. Baggon, AERE-R-3864) for the measurement of intermediate neutron doses near nuclear devices. The present authors constructed a similar instrument using a thin (r = 6.3 cm) paraffin-filled Cd sphere. At the center, they placed a thermal neutron detector T-1, 8 mm thick and 26 mm in diameter. Distortions were reduced by means of a plexiglass light-guide between the scintillator and the FEU-16 cathode. The article gives the circuit diagram of the electronic part of the self-contained device and concludes by pointing out that the knowledge of the shielding material and the source type are necessary for a correct estimate of the intermediate neutron dosage. Orig. art. has: 2 figures and 1 table.

Card 1/2

L 23789-65

ACCESSION NR: AT5003291

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NO REF SOV: 004 OTHER: 003

Card 2/2

MAMEDOV, R.A.; KRAMER-AGEYEV, Ye.A.; POZDNYAKOV, V.I.

Angular distribution of gamma bremsstrahlung from a thick target. Izv. AN Azerb.SSR.Ser.fiz.-tekh.i mat. nauk no.3:131-134 '64.
(MIRA 17:12)

L 1158-66 EWT(m)/ETC/EPF(n)-2/EWG(m)/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/WW/JG

ACCESSION NR: AT5023144 UR/2892/65/000/004/0007/0014

AUTHOR: Kramer-Ageyev, Ye. A.; Mashkovich, V. P.; Sakharov, V. K. 62 B+1

TITLE: Dosage composition of neutron radiation in shielding materials 19

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 4, 1965, 7-14

TOPIC TAGS: neutron radiation, fast neutron, radiation dosimetry, neutron shielding, water, carbon, beryllium, concrete, iron

ABSTRACT: The objects of the present work were to calculate the dosage distribution for water, carbon, beryllium, concrete, and iron for the following assumed limiting energies of the intermediate and fast neutron groups: 0.5; 1.0; 1.5 Mev, and compare the results with existing literature data, and evaluate the accuracy of the measuring instruments used. The calculated data (shown in figures and in tabular form) indicate that with a change in the limiting energy of the intermediate and fast groups, the contribution of the neutrons of each of these groups to the total dose can change considerably. The following conclusions are

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000826020018-4"

L 1158-66

ACCESSION NR: AT5023144

drawn: 1) in the design of neutron radiation shielding, the contribution of the neutrons of all energy groups to the dosage must be taken into account; 2) for different shielding materials, the contribution of different neutron groups is determining; and, 3) a change in the limiting energy of the intermediate and fast neutron groups from 0.5 to 1.5 Mev can considerably affect the distribution of the neutrons over these two groups. The threshold effectiveness, ε_{th}, is determined by the formula:

$$\varepsilon_{th} = \frac{\int_0^\infty \varepsilon\varphi(E)\,dE}{\int_{E_{th}}^\infty \varphi(E)\,dE}, \quad (2)$$

where ε is the efficiency of the instrument; φ (E) is the spectrum of the instrument; E_{th} is the effective threshold. It is stated that the dosage of neutrons can be estimated for intermediate and fast neutrons in the majority of cases. Orig. art. has: 2 formulas, 3 figures, and 2 tables

Card 2/3

L 1158-66

ACCESSION NR: AT5023144

ASSOCIATION: None

SUBMITTED: 00

NR REF SOV: 004

ENCL: 00

OTHER: 005

SUB CODE: NP

Card 3/3

L 1163-66 EWT(m)/EPF(n)-2/EWA(h)

ACCESSION NR: AT5023149 UR/2892/65/000/004/0061/0067

44,55

AUTHOR: Kramer-Ageyev, Ye. A.; Troshin, V. S. 44,55 44

TITLE: Methods of analyzing the spectra of intermediate neutrons obtained on a spectroscope during flight time 19,44,55 BH

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 4, 1965, 61-67 44,55

TOPIC TAGS: photonuclear reaction, neutron spectrum, uranium, radiation dosimetry

ABSTRACT: Neutrons generated as a result of a photonuclear reaction in a uranium target and passing through a collimating channel 3 meters long and 20 cm in diameter came into contact with a shielding barrier in their path. The distance from the barrier to the point of observation was 7.2 meters. Types SNM-0-5 and SNM-8 counters were used as detectors. The time distribution of the impulses was studied with a variation of a type AI-100 analyzer. The flight of the neutrons had an equal probability within the time interval from 0 to 0.5 microseconds. The form in time of the lines of the boron counters is explained by the

Card 1/2

L 1163-66
ACCESSION NR: AT5023149

finite nature of the diffusion time of the electrons toward the region of collision ionization, and depends on the dimensions of the counters, gas pressure, applied voltage, and level of discrimination. Since theoretical prediction of the form of the lines is difficult, they were determined experimentally. The article derives an integral equation for the instrument spectrum and goes on to give details of three approximate methods for its solution. These methods are 1) the method of polygonal expansions, involving the use of matrices; 2) a method analogous to the method of counter efficiency; and, 3) a method of analyzing the instrument spectrum based on complete resolution of the system. It is claimed that the above methods are especially valuable for the case of radiation with neutrons with short flight times. Orig. art. has: 7 formulas and 6 figures

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 001 OTHER: 000

Card 2/2

L 6471-66 EWT(m)/EPF(c)/ETC/EPF(n)-2/EWG(m) WW/DM
ACCESSION NR: AP5019814 UR/0089/65/019/001/0046/0048
539.125.5:539.163.1

AUTHOR: Kramer-Ageyev, Ye. A.; Markov, V. N.; Mashkovich, V. P.; Sakharov, V. K.; Sakharov, V. M.

TITLE: Neutron distribution in a straight cylindrical channel

SOURCE: Atomnaya energiya, v. 19, no. 1, 1965, 46-48

TOPIC TAGS: neutron distribution, nuclear reactor shielding, spectral distribution, neutron spectrometry, fast neutron

ABSTRACT: The authors investigated the energy and spatial distribution of the neutrons in a straight cylindrical channel 14.4 cm in diameter and 150 cm long, passing through a water shield. The neutron source was a disc isotropic Po-α-Be source stimulating point-like Po-α-Be source emitting 2 x 10^7 neut/sec. The experimental setup was such that the source could be moved radially for each fixed position of the detector, so that the spectrum of the fast neutrons could be determined from a standard formula. The spectral distribution of the fast neutrons was measured with a single-crystal neutron spectrometer, and the intermediate neutrons were counted with a paraffin-imbedded fast-neutron counter. The results show no deviations, within the limits of errors, from the spectrum of the Po-α-Be

L 6471-66
ACCESSION NR: AP5019814

source. The spatial distribution of the fast neutrons agrees within 15% with the calculations based on the beam analysis method. A study of the dependence of the fast-neutron flux on the source radius showed that with increasing distance from the source to the detector (z), the source diameter which can be regarded as infinite, decreases. The fast and intermediate neutrons exhibit approximately a dependence on z ($\sim z^3$), with the fraction of the intermediate neutrons becoming somewhat smaller with increasing z. "The authors thank O. I. Leypunskiy for valuable advice and a discussion." Orig. art. has: 5 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 15Jul64 ENCL: 00 SUB CODE: NP

NR REF SOV: 002 OTHER: 006

8C
Card 2/2

L 22379-66 EWT(m)/EPF(n)-2/EWA(h)

ACC NR: AP6007957 SOURCE CODE: UR/0089/66/020/002/0161/0162

41
39
B

AUTHORS: Kramer-Ageyev, Ye. A.; Troshin, V. S.

ORG: none

19

TITLE: Angular distribution of the doses of neutrons scattered by shields

SOURCE: Atomnaya energiya, v. 20, no. 2, 1966, 161-162

TOPIC TAGS: neutron scattering, angular distribution, radiation dosimetry, reactor shielding

ABSTRACT: The authors measured the angular distribution of neutron doses behind shields of water (5 -- 15 cm thick), concrete (10 -- 60 cm), and graphite (20 cm). The neutron source was the (γ, n) reaction in a uranium target in a linear 30-MeV electron accelerator. The neutron radiation was collimated through a channel in the accelerator shield. The angular divergence of the beam was close to 3° and the diameter of the channel at the output was 20 cm. The neutron detector was the 'equal dose' dosimeter described by Kh. D. Androsenko and

Card 1/2 UDC: 539.125.52

2

L 22379-66
ACC NR: AP6007957

2

G. N. Smirenkin (Pribory i tekhnika eksperimenta No. 5, 4, 1962). A boric-acid solution shield was used to eliminate the neutrons scattered by the surrounding objects. The results in all three materials are found to be independent of the thickness of the shield and similar to the results obtained by others for polyethylene. In addition, the angular distribution of slow neutrons was measured. All angular distributions had a similar appearance and the curves differed essentially only in the magnitude of the dose as a function of the shield material. The authors thank O. I. Leypunskiy and M. I. Pevzner for valuable hints and for a discussion of the results. Orig. art. has: 3 figures.

SUB CODE: 20/18/ SUBM DATE: 20Sep65/ ORIG REF: 004/

Card 2/2dda

21.1000,24.7600

77237
SOV/89-8-2-2/30

AUTHORS: Kramerov, A. Ya., Fridman, Ya. B., Ivanov, S. A.

TITLE: Thermal Stresses in Reactor Structures

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 2, pp 101-111 (USSR)

ABSTRACT: Introduction. Specific operating conditions of nuclear reactors stimulated many studies of thermal stresses and their causes, in particular, studies of: (a) intensive neutron and γ-radiations lowering ductility at low temperatures; (b) internal sources of radiative heat-generation; (c) high heat flows (10^6 kcal/m^2·h) and heat-generation densities (10^9 kcal/m^3·h) which cause large temperature gradients (approximately 100° C/mm); (d) applications of new, little-known materials and combinations of materials with different thermal expansion coefficients; (e) thermal shocks in structures (like those following sudden shutdowns of reactors in case of damage); and (f) use of new complex structures not having analogs in conventional engineering, nor

Card 1/19
/13

Thermal Stresses in Reactor Structures

77237
SOV/89-8-2-2/30

being tested during continuous operation. Estimate of the Magnitude of Thermal Stresses. The authors first review the known facts that in the case of very high thermal stresses the body or parts of it become ductile, causing thermoplastic stresses which depend also on the "prehistory" of the body. Ther thermoplastic stresses can be computed by known approximate methods. In the elastic region stresses determined at any moment by the temperature field, and the temperature fields themselves, can be obtained using known system of equations for thermal conductivity and theory of elasticity. For the case of bodies with cylindrical symmetry, often encountered in reactors, there exist known equations valid in the case of no outside field, for the azimuthal, radial, and axial normal thermoelastic stresses of the first order σ_θ, σ_r, and σ_z.

Card 2/19

$$\sigma_\theta = \frac{E}{1-\nu}\left(\frac{1}{r^2}\frac{r^2+a^2}{b^2-a^2}\int_a^b \alpha\Delta T(r)\,r\,dr + \right.$$

$$\left. + \frac{1}{r^2}\int_a^r \alpha\Delta T(r)\,dr - \alpha\Delta T(r)\right); \qquad (3)$$

$$\sigma_r = \frac{E}{1-\nu}\left(\frac{1}{r^2}\frac{r^2-a^2}{b^2-a^2}\int_a^b \alpha\Delta T(r)\,dr - \right.$$

$$\left. - \frac{1}{r^2}\int_a^r \alpha\Delta T(r)\,r\,dr\right) \qquad (4)$$

and

$$\sigma_z = \sigma_\theta + \sigma_r. \qquad (5)$$

where E is Young's modulus (kg/cm^2); ν is Poisson coefficient; $\Delta T = T_r - T_{or}$ is the change in temperature with respect to the original temperature (T_{or})

of the unstressed state; a, b are the inner and outer radii of the tubing; α is the coefficient of thermal linear expansion. The authors discuss some special cases, and derive the known equation

$$\sigma = \frac{E}{1 - c\nu} (\overline{\alpha \Delta T} - \alpha \Delta T).$$

A

where $\overline{\alpha \Delta T}$ is the value of the mean free thermal stretching, and c can take the values of 0, 1, and 2 for the uniaxial, biaxial, and volume stresses respectively. This equation enables one to find the largest stress in a cylindrical bar, thick-walled tube, in a plate with fixed ends, and a symmetrical temperature distribution in some other cases when principal deformations in every point are equal to one another, or some of them are equal to zero (linear and plane stress states), and also if they are constant over any main surface. The authors note that little was done to develop methods for evaluating thermal stresses of the second order. Thermal stresses of the first order and temperature distributions may be represented as a sum of the particular solution of the homogeneous equation (without internal sources of heat and actual boundary conditions--index ΔT) and the solution of the heat transfer equation with internal heat sources and a zero boundary condition (index q). This is a consequence of the linearity of the heat transfer equation. Each of these solutions can in turn be written as a product of three terms, expressing respectively the influence of the physical properties, density of heat generation, and the size (or ΔT_b) and shape of the bodies. The authors obtained

$$\sigma = \sigma_q + \sigma_{\Delta T} = \left[\frac{\alpha E}{1-\nu}\,\frac{1}{\lambda}\right]\left[\frac{q r_0^2}{4}\right]\Psi_{\sigma_q} + \left[\frac{\alpha E}{1-\nu}\right]\left[\frac{\Delta T b}{2}\right]\Psi_{\sigma_{\Delta T}}. \qquad 8$$

by using Eq. (2)

$$\Delta T = \frac{q_F \frac{1}{2} r_0}{\lambda} = \frac{1}{\lambda} \frac{Q}{F_q} \frac{V}{F_q} = \frac{q}{4\lambda} r_0^2, \qquad (2)$$

for the temperature difference across the cross section of a more of less plastic body, in the presence of internal heat sources. Here q is the density of heat generation rate (kcal/$m^3 \cdot h$); 1/2 r_o = 1/2 $\frac{2V}{F_q}$ is the quantity proportional to the mean distance of travel of heat in the body; V is the volume of the body (m^3); $q_F = \frac{Q}{F_q}$ is the heat flow (kcal/$m^2 \cdot h$); Q is the total heat transfer rate (kcal/h); F is the surface of the heat exchange; and Ψ is the form factor, equal to the ratio of stresses (or temperature drops) on the body of a given shape to those in a cylinder (all other conditions being equal). If we neglect neutron energy absorption, we have to take into account only the average absorption of γ-rays, which is proportional to the specific gravity for elements in the middle of the Atomic Table. We do this by modifying the first factor (expressing the influence of physical factors) in Eq. B into

$$\frac{\alpha E}{1-\nu}\,\frac{\gamma}{\lambda}. \qquad C$$

Introducing finally the ratio σ / σ_D, the term accounting for physical properties becomes

$$\frac{\alpha E}{1-\nu}\,\frac{1}{\lambda\sigma_T}. \qquad D$$

Thermal Stresses in Reactor Structures

77237
SOV/89-8-2-2/30

adjusted for the possibility that the body becomes plastic. It is difficult to avoid the transition to the domain of irreversible deformation when working with materials of high α and low λ and σ_D. Uranium and stainless steel in this respect are poor. In spite of their low σ_B and σ_T value, thorium, graphite, and, in a smaller degree, zirconium and aluminum are less liable to produce permanent deformations. (Abstracter's Note: λ, $\sigma_{D(uctile)}$ and σ_B were never defined in this article.) The authors point out that even without touching the problems of cost, radiation stability, and corrosion stability of materials, their comparison concerning the thermal stress stability represents an extremely complex and conditional problem. Appropriate complex coefficients should contain reliability coefficients which are still vague for many ductile materials subjected to thermal fatigues. The influence of the σ_D quantity is not well defined since its increase

Card 8/~~19~~ 13

Thermal Stresses in Reactor Structures

77237
SOV/89-8-2-2/30

sometimes turns out to be harmful (because of a slower relief from the thermal stresses of the plasic deformation), but can also have useful influences, such as a reduction of accumulation of plastic deformations. In addition, many properties depend on the preparation and structure of the material. Comparison of heat-generating elements of various shapes. The authors require that for comparison purposes all the elements have the same volume per unit of the heat-emitting surface. They present an equation for maximum temperature drops and macrotemperature elastic stresses of the first kind for four basic cross sections of heat-producing elements (not taking into account heat production). The temperature drop $\frac{qr_o^2}{4\lambda}$ along r_o is denoted by ΔT_o, and the maximum thermoelastic stresses in the cylinder $\frac{\alpha E}{1-\nu} \frac{\Delta T_o}{2}$ is denoted by σ_o. These equations were obtained after solving the equations for stationary heat transfer ($-\lambda \Delta T = q$), assuming

Card 9/19

appropriate boundary conditions. The derivation of the most complicated third case is presented in the Appendix. In case 1 concerning a tube or cylinder cooled from the outside

$$\Delta T_{max} = \Delta T_0 \Psi^{(1)}_{\Delta T_q}, \ (\sigma_\theta)_{r=b} = \sigma_0 \Psi^{(1)}_{\sigma_q}.$$

Case 2 represents represents a tube cooled from the inside,

$$\Delta T_{max} = \Delta T_0 \Psi^{(2)}_{\Delta T_q}; \ (\sigma_\theta)_{r=a} = \sigma_0 \Psi^{(2)}_{\sigma_q}.$$

In the case 3 the tube is cooled both from the inside and outside

$$\Delta T_{max} = \Delta T_0 \frac{1-\tilde{\varrho}^2(1-\ln\tilde{\varrho}^2)}{(1-\varrho)^2},$$

where

$$\tilde{\varrho}^2 = \frac{R^2}{b^2} = \frac{1}{\ln \varrho^2}\left[\frac{\Delta T_b}{\Delta T_0}(1-\varrho^2)+\varrho^2-1\right]$$

and R is the radius $(a < R < b)$ of the circle where $T = T_{max}$ and $\rho = a/b$. In case 4 concerning a plate cooled from two sides

$$\Delta T_{max} = \Delta T_0 \frac{1}{2}\left(1+\frac{\tilde{x}}{\delta}\right)^2,$$

where $\frac{\tilde{x}}{\delta} = 1/2 \frac{\Delta T_B}{\Delta T_0}$ and $\tilde{x}$ distance from the center of the plate (of thickness δ) to the point of maximum temperature $(T(\tilde{x}) = T_{max})$. The significance of parameters b, Ψ_{Tq}, $\Psi_{\sigma q}$, and $\Psi_{\sigma \Delta T}$ is shown in Table 1, and in Figs. 1, 2, and 3.

Danger From Thermal Stresses. One way of reducing these dangers is to reduce thermal stresses by: (a) utilizing materials with a small value of the $\alpha E/\lambda$ complex, and joining together materials with similar ($\alpha \Delta T$); (b) choosing shapes permitting maximum free expansion; (c) utilizing smooth shapes and homogeneous cooling conditions; and (g) securing operating conditions which exclude significant and repeated variations in temperature. The second way is to increase the stability of materials by satisfying two requirements contradictory in a sense: (2) augmenting the ductile limit to the point where there is no piling-up of dangerous residual deformations; and (b) by improving the plastic properties of the material, their homogeneity, and fineness of their grain structure. The authors emphasize the importance of the use of smoothly machined surfaces. Conclusions. The methods of the theory of elasticity have two principal limitations: they (a) cannot give account about the microbehavior of the materials, and microstresses,

Thermal Stresses in Reactor Structures

77237
SOV/89-8-2-2/30

together with macrostresses, are an important factor in the starting phases of breakdowns; and (b) they do not take into account effects of the elastically ductile region. The authors emphasize the resulting need for approximate estimates. They also emphasize the need for further experiments which would determine the influence of the number, amplitude, and suddenness of temperature changes on plastic deformations. It would be advantageous to have a characteristic of the material describing its resistance to thermal stresses; e.g., the curve of residual deformation versus the number of thermal cycles up to the appearance of microcracks of preassigned size. There is 1 table; 3 figures; and 18 references, 12 Soviet, 1 Austrian, 1 French, and 4 U.S. The U.S. references are: B. Langer, Trans. ASME, 77, Nr 5 (1958); K. Mercxs, Trans. ASME, 80, Nr 5 (1958); B. Gatewood, Thermal Stresses, U.S.A. (1957); R. Dane, AEC publication: Nuclear Reactors, Vol II (1957).

SUBMITTED: May 9, 1959

Card 19/19

S/089/61/010/003/001/021
B106/B209

AUTHOR: Kramerov, A. Ya.

TITLE: Choice of optimum parameters for a nuclear power station

PERIODICAL: Atomnaya energiya, v. 10, no. 3, 1961, 211-221

TEXT: In the present paper a system of equations is determined for the optimum parameters providing minimum costs of electric energy from a nuclear power plant. It is assumed that the scheme, the materials, and the type of plant are chosen first, and that the problem is then reduced to finding the values of the optimum conditions for the structural and working parameters of the plant. The minimum costs of electric energy are determined from the condition that the partial derivatives of the costs with respect to the independent parameters x_k have to vanish:

$$F_k(x_k) = \frac{\partial \ln c_0}{\partial \ln x_k} = \sum_i cC_i' - (1+n)N_0' + nN_{c.n}' = 0. \quad (1)$$

(1).

Card 1/10

In this expression, $c_э = \frac{C}{\tau N_H}$ denotes the costs of 1 kwh, $N_H = N_\sigma - N_{C.H}$ - the effective electric power, $N_{C.H}$ - the power consumed in operation, $C = \sum_i C_i$ - the costs of construction and operation during the period τ of normal working, including fuel costs; $n = \frac{N_{C.H}}{N_H}$. In the following, $Y' = \frac{\partial \ln Y}{\partial \ln x_k}$ for any quantity Y. The relation between the costs C_i and the parameters may be represented in the form of a polynomial of G_i-th order: $C_i = \sum_i k_{ij} G_i^{n_{ij}} \simeq C_i^k + k_i G_i$, where k_{ij} and n_{ij} are constant coefficients ($C_i^k = k_{io}$; $k_{i1} = k_i$; $n_{io} = 0$; $n_{i1} = 1$). Assuming linear dependence of costs on the weight of the plant, and considering that the price of 1 kg of fuel depends linearly on the fuel enrichment X and on the surface of 1 kg of fuel element, the following expression is obtained:

$$F_k = -a_Q Q' + a_{c.н} N'_{c.н} + c_{т.м} m X' + c^{п}_{пг} F' - a_{\eta}\eta' + c^{п}_{I} p'_{I} + c^{p}_{II} p'_{II} - c_{т}\Gamma' - c_{нэг} r d'_{т.в} + c^{п}_{p} S'_{0} + c^{п}_{p} \frac{l_a}{L} l' + c^{п}_{тр} S'_{тр} m_{тр} = 0, \quad (3)$$

(3).

The notations are as follows: Q - thermal power of the reactor; $N_\sigma = Q\eta_\sigma$ - gross power; $N'_\sigma = Q' + \eta'_\sigma$; η_σ - gross efficiency; $a_Q = n + c_k + c^{\pi}_{p} + c^{\pi}_{\pi r} + c^{\pi}_{H} + c^{\pi}_{Tp}$; $a_\eta = n + 1 - c_{э.ч}$; $a_{C.H} = n + c^{\pi}_{H}$ - coefficients describing the relative change in costs of 1 kwh due to the relative change in unit thermal energy, efficiency, and energy consumed during circulation, respectively; l_a/L - the fraction of overall length L of the reactor proportional to the length of the core, l; the c's denote the variable portion of costs due to size and design of the individual units in the reactor. Some of the above quantities Y are "primary" variables changing with respect to geometry (reactor cross sections S_0, tubing cross section S_{Tp}, equivalent diameter of fuel elements $d_{T.Э}$, length of the core l), operational conditions (pressure of the first (p_I) and second (p_{II}) circuit), or physical properties (enrichment X, depth of burning Γ). In this case, all derivatives Y' vanish, except when $Y = x_k$. The remaining quantities Y entering Eq. (3), viz. thermal power Q, surface of the steam generator F, efficiency of the plant η, and power consumed during circulation $N_{C.H}$ are functions of the directly chosen geometrical, schematical, and physical parameters, and are termed "secondary" parameters of the nuclear power plant. The expression for Y' which enters the condition $F_k = 0$ is substituted in $d \ln Y = \sum_k Y' d \ln x_k$. By introducing d ln Y into Eq. (3), one obtains the required system of equations which interrelates the optimum parameters. This system is obtained after calculating the quantities Q', $N'_{C.H}$, η', F', and X' and substituting them into Eq. (3) in the form of the coefficients at the respective differentials of the independent parameters G (consumed weight of coolant), T_s (boiling temperature of the substance in the steam generator), p_{II}, p_I, χ_F, S_{Tp}, $S_{\pi p}$ (cross section of the coolant lead to the steam generator), S_o, $\varepsilon = \frac{S}{S_o}$ (S - cross section of coolant passing through the core), $\varepsilon_{T.Э} = \frac{S_{T.Э}}{S_o}$ ($S_{T.Э}$ - cross section of fuel element in the core), $d_{T.Э}$, l, and Γ. The system of equations for the optimum conditions is the following:

$$1)\ F_G = -a_Q(1-\varkappa B) + a_{o.п}[3 + \lambda'(1 - \xi_{тp}) + (1-\bar{\alpha}')\xi_{пr}] + c^{п}_{пr}(1-\bar{\alpha}') = 0; \qquad (12)$$

$$2)\ F_{T_s} = \frac{a_Q}{\frac{T_{макс}}{T_s} - 1} - \frac{a_\eta}{\frac{T_s}{cT_x} - 1} + c^{p}_{II} 4 \frac{T_s}{T_s - 273} = 0. \qquad (13)$$

$$F_{p_{II}} = F_{T_s}\frac{d\ln T_s}{d\ln p_{II}} = \frac{1}{4}\frac{T_s-273}{T_s}\Big[a_Q\times \times\left(\frac{T_{\text{макс}}}{T_s}-1\right)^{-1} - a_\eta\left(\frac{T_s}{cT_x}-1\right)^{-1}\Big] + c^p_{II} = 0 \quad (13')$$

(здесь и ниже $T_s = T_s(p_{II})$;

3) $$F_{p_I} = -a_Q\frac{1}{4}\frac{T_s(p_I)-273}{T_s(p_I)}\times \times\left(1-\frac{T_s}{T_s(p_I)}\right)^{-1} + c^p_I = 0, \quad (14)$$

$$F_{p_I} = c^p_I - 2a_{c.н}\frac{\partial\ln\gamma}{\partial\ln p_I} = c^p_I - 2a_{c.н} = 0, \quad (14')$$

S/089/61/010/003/001/021
B108/B209

$$4)\ F_{X_F} = a_Q f'_{X_F} + a_{c.n} \frac{\xi_{nr}}{\ln X_F} + \frac{c^{n}_{nr.}}{\ln X_F} = 0; \qquad (15)$$

$$5)\ F_{s_{\tau p}} = -2a_{c.n}\xi_{\tau p} + c^{n}_{\tau p} = 0; \qquad (16)$$

$$6)\ F_{s_{nr}} = -a_{c.n}\xi_{nr}(3 + \lambda' - \bar{\alpha}') + \bar{\alpha}' c^{n}_{nr} = 0. \qquad (17)$$

$$7)\ F_{s_0} = -a_Q \varkappa B - a_{c.n}\xi_p(2 - \lambda') + c_{\tau.M} m X'_{s_0} + c^{n}_{p} = 0; \qquad (18)$$

$$8)\ F_{\varepsilon} = -a_Q \varkappa \frac{h}{a} - 3a_{c.n}\xi_p + c_{\tau.M} m X'_{\varepsilon} = 0; \qquad (19)$$

$$9)\ F_{\varepsilon_{\tau.0}} = a_Q \varkappa \left(\frac{h}{a} - B\right) + a_{c.n}\xi_p(1 - \lambda') + c_{\tau.M} m X'_{\varepsilon_{\tau.0}} = 0; \qquad (20)$$

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000826020018-4"

$$10)\ F_{d_{\text{т.э}}} = -a_Q \varkappa (1-B) - a_{\text{c.н}} \xi_p (1-\lambda') + c_{\text{т.м}} m X'_{d_{\text{т.э}}} - c_{\text{пар}} r = 0; \quad (21)$$

$$11)\ F_l = a_Q \varkappa + a_{\text{c.н}} \xi_p + c_{\text{т.м}} m X'_l + c_p^n \frac{l_n}{L} = 0; \quad (22)$$

$$12)\ F_\Gamma = c_{\text{т.м}} m X'_\Gamma - c_\text{т} = 0. \quad (23).$$

Eq. (13') follows from Eq. $(\overline{13})$ through the relation $F_{p_{II}} d \ln p_{II} = F_{T_s} d \ln T_s$. Here and below, $T_s = T_s(p_{II})$. For a gas coolant, Eq. (14') holds, since for a perfect gas $\frac{\partial \ln \gamma}{\partial \ln p_I} = \frac{\partial}{\partial \ln p_I} \ln \frac{p_I}{RT} = 1$. In Eqs. (18) - (23), the optimum conditions for the reactor parameters depend also on the logarithmic derivative of the fuel enrichment with respect to these parameters: $X'_k = \frac{\partial \ln X}{\partial \ln k}$ with the k's standing for the respective parameters. The values of the parameters of a nuclear power plant may be calculated in sufficient approximation to the optimum for two cases: 1) $|F_k| \ll 1$; 2) $|F_k| \ll |F_k^+|$ and $|F_k| \ll |F_k^-|$ (F_k^+ accounts for the costs when the given parameters rise, F_k^- when they fall). For the exact optimum, $F_k = F_k^+ - F_k^- = 0$. The first case means that $\frac{\partial c_э}{c_э} = F_k \frac{\partial x_k}{x_k} \ll \frac{dx_k}{x_k}$. The second case means that a given parameter which is chosen near the optimum value, is independent of its influence on the relative change in the costs of liberated energy. The optimum parameters are calculated from Eqs. (12) - (23) as follows: a) On the basis of experiments, the parameters are roughly chosen; b) the required costs and energy characteristics of the nuclear power plant are estimated; c) approximate determination of the relations between power and costs of the plant on one side, and the chosen parameters on the other. The relations obtained are then applied to the expression $F_k = 0$. The author calculated several parameters to illustrate the application of the system of equations obtained. These parameters include the power consumed during circulation of the coolant, the saturation temperature of the substance in the steam generator, the capacity of the coolant in the steam generator, the velocity of the coolant in the first circuit and in the steam generator, and the optimum ratio of the pre-heating of the coolant to the difference between the maximum temperature of the fuel elements and the temperature of the coolant on leaving the reactor.

SUBMITTED: June 6, 1960

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000826020018-4"

ABRAMOV, V.I., inzh.; KRAMEROV, A.Ya., inzh.; RYABOVA, G.N., inzh.;
SURNOV, A.V., inzh.; KEMEL'MAN, M.N., kand. tekhn. nauk

Some experimental data on steam entrapment in the lowering section of a circulatory stage. Teploenergetika 10 no.8:46-50 Ag '63.
(MIRA 16:8)

1. Moskovskoye otdeleniye TSentral'nogo nauchno-issledovztel'skogo kotloturbinnogo instituta imeni Polzunova.
(Boilers)

KRAMEROV, A. Ya.; STEKOLNIKOV, V. V.

"Trends in water-moderated water-cooled power reactor design."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

L 19863-65 EWT(m)/EPF(c)/EPF(n)-2/EPR Pr-4/Ps-4/Pu-4 AEDC(b)/SSD/
BSD/AFWL MLK
ACCESSION NR AM5007626 BOOK EXPLOITATION S/

Kramerov, Aleksandr YAkovlevich; Shevelev, YAsen Vladimirovich B+1

Engineering calculations of nuclear reactors (Inzhenernyye raschety yadernykh reaktorov), Moscow, Atomizdat, 1964, 715 p. illus., biblio. Errata slip inserted. 2,050 copies printed.

TOPIC TAGS: nuclear reactor

PURPOSE AND COVERAGE: This book is devoted to the methods for engineering calculations of nuclear reactors -- thermal and hydromechanical. In addition, it touches on problems associated with thermal stresses and strains. A large part of the book is taken up by analysis of nonstationary processes. Reactors with boiling and non-boiling heat carriers are considered. There is a detailed description of the effect of various random deviations from calculated conditions on the output characteristics of a reactor (the mechanical factors). Besides the calculations, the problems that are associated in one way or another with the selection of the best engineering calculations are cited. The selection of the optimal parameters is dealt with in the concluding section. The book is intended for engineers who design reactors and students in power engineering and engineering physics. A number of the sections will be useful to engineers concerned with the use of nuclear

Card 1/4

L 19863-65
ACCESSION NR

power installations.

TABLE OF CONTENTS [abridged]:

Card 2/4

L 19863-65
ACCESSION NR

Card 3/4

L 19863-65
ACCESSION NR AM5001022

SUB CODE: NP SUBMITTED: 07Oct64 NR REF SOV: 130

OTHER: 158

Card 4/4

L 23074-65 EWT(m)/EPF(c)/EPF(n)-2/EPR Pr-4/Ps-4/Pu-4

ACCESSION NR: AP5001264 S/0089/64/017/006/0427/0439

AUTHOR: Kramerov, A. Ya.; Markov, Yu. V.; Skvortsov, S. A.; Denisov, V. P.; Kulikov, Ye. V.; Sorokin, Yu. P.; Stekol'nikov, V. V.; Khokhlachev, A. A.; Tatarnikov, V. P.; Sidorenko, V. A.

TITLE: Some trends in the development of the second Voronezh power reactor

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 427-439

TOPIC TAGS: power reactor, water cooled reactor, water moderated reactor, reactor economy, second Voronezh power reactor

ABSTRACT: The paper is a summary of the SSSR #304 report at the Third International Conference on Peaceful Uses of Atomic Energy in Geneva, 1964. The first Voronezh reactor, of 210 Mw (elect.), was described earlier (S. A. Skvoztsov, Transactions of the Second International Conf., 1959). This reactor is now being readied for exploitation. The second Voronezh reactor, of 365 Mw(elect.) is under construction. The water pressure will be 120 atm. Water is used as mod-

Card 1/2

L 23074-65
ACCESSION NR: AP5001264

erator and for the heat transfer. During the operation of about 2 years, fuel consumption is about 30,000 Mw-day/tons of uranium. The second reactor is a modernization of the first reactor. Details are given of the construction, and the effects of various characteristics on the exploitation cost are estimated. Orig. art. has: 7 figures

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 005 OTHER: 003

Card 2/2

KRAMEROV, N.

Priority for educational work. Pozh.delo 6 no.10:6 O '60.
(MIRA 13:10)

(Fire prevention—Study and teaching)

KRAMEROV, N.

Expanding the rights of volunteer organizations. Pozh.delo 9 no.12:
14 D '63. (MIRA 17:1)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000826020018-4"

LESNY, Ivan; VOJTA, Vaclav; KRAMEROVA, M.

Extrapyramidal syndrome and lesions of posterior spinal column in hypothyreosis in children. Cesk.pediat. 14 no.9:824-832 S '59.

1. Odd. pro detskou neurologii pri neurologicke klinice akademika prof. Hennera a pri IV. detske klinice prof. dr. F. Blazka.

(HYPOTHYROIDISM in inf.& child.)
(SPINAL CORD dis.)
(EXTRAPYRAMIDAL TRACTS dis.)

LESNY, I.; BECO, V.; DITTRICH, J.; KRAMEROVA, Z.

Clinical & electroencephalographic findings in encephalitis caused by rubeola. Cesk. neur. 21 no.5:306-311 Sept 58.

1. Oddeleni pro detskou neurologii v Praze pri neurologicke klinice akademika Hennera a pri IV. detska klinice prof. dr Blazka, vedouci lekar doc. dr. I. Lesny.
(ENCEPHALITIS, in inf. & child
caused by measles, clin. & EEG findings (Cz))
(MEASLES, compl.
encephalitis, clin. & EEG findings (Cz))

KRAMEROVA,Z.; VOJTA,V.; CERNY,M.; SEKLA,B.; SOUKUP,F.

Congenital cerebellar hypoplasia with congenital heart defect and autosomal trisomy in monozygotic twins. Cesk. pediat. 18 no.12:1096-1100 D'63.

1. IV. detska klinika fakulty vseobecneho lekarstvi KU v Praze (prednosta: prof. dr. F.Blazek); Neurologicka klinika fakulty vseobecneho lekarstvi KU v Praze (prednosta:akademik K.Henner) a Biologicky ustav fakulty vseobecneho lekarstvi KU z Praze (prednosta: prof.dr. B.Sekla).

COUNTRY : CZECHOSLOVAKIA
CATEGORY : Chemical Technology. Chemical Products and Their Uses. Part 2. Ceramics. Glass. Binding*

ABS. JOUR. : RZhKhim., No. 1 1960, No. 1677

AUTHOR : Kramos, E.; Novak, L.
INST. : Chair of Silicate Technology at the Higher**
TITLE : Device for Measuring the Whiteness and Transparence of Porcelain

ORIG. PUB. : Silikaty, 1959, 3, No 2, 163-167

ABSTRACT : A device for measuring the whiteness and transparence of porcelain correct to ±1%, constructed and used by the Chair of Silicate Technology at the Higher Technical School (Praha, Czechoslovakia) from 1957, is described. The device is based on the photoelectric principle

*Materials. Concrete. Ceramics
**Technical School, Praha

CARD: 1/5

1-32

COUNTRY :

CATEGORY :

ABS. JOUR. : RZhKhim., No. 1 1960, No. 1[illegible]77

AUTHOR :

INST. :

TITLE :

ORIG. PUB. :

ABSTRACT : [illegible] consists of [illegible] (I) and of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] parallel beam of [illegible] may be changed by means of two iris diaphragms, [illegible] separated from a [illegible] of a lens. In the optical part of the device, [illegible]

CARD: 2/3

COUNTRY : [illegible]

CATEGORY : [illegible]

ABS. JOUR. : RZhKhim., No. 1 1960, No. 1077

AUTHOR : [illegible]

INST. : [illegible]

TITLE : [illegible]

ORIG. PUB. : [illegible]

ABSTRACT (contd) : there is a place for the introduction of color filters. The beam of rays falls on an accurately [illegible] surface of the [illegible] which is fixed by a spring to the measuring disc. One of the F for measuring the whiteness determines the intensity of the reflected rays of the sample (at an angle of 45°) and the other one, the rays which passed through the sample. By means of a switch, both F may be connected to

CARD: 2/5

COUNTRY :
CATEGORY :

ABS. JOUR. : RZKhim., No. 1 1960, No. 1877

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT cont'd : the input circuit of the electromagnetic amplifier which is provided at the outlet with devices for measuring the voltage, which depends on the illumination of F. The measurement of the whiteness is conducted consecutively with three color filters, and with each change of color it is necessary to first effect a calibration of the scales of the instruments of the electromagnetic amplifier. This is performed

CARD: 2/5

COUNTRY :
CATEGORY :

ABS. JOUR. : RZKhim., No. 1 1960, No. 1977

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : with the aid of a standard sample, the thickness of which is known accurately. To measure transparence, plates 20 x 20 of 1.5-2 mm thickness are used, and for this purpose only the lower P is necessary. Before measuring, the calibration of the scales of the device for the voltage of P is also effected by means of a standard sample, the transparence of which is known accurately.-- S. Glebov
cont'd

CARD: 5/5

H-35

KRAMES, Evzen; NOVAK, Lubomir

Servomechanical recording of dilatometric measurements. Sbor chem tech no.3, part 1:453-457 '59.

1. Katedra technologie silikatu, Vysoka skola chemicko-technologicka, Praha; Vyzkumne pracoviste u n.p. Karlovarsky porcelan, Karlovy Vary-Brezova a Katedra automatizace a merici techniky, Ceske vysoke uceni technicke, Praha.

KRAMES, E.

"Whiteness and transparency of porcelain." P. 51.

SKLAR A KERAMIK. (Ministerstvo lehkeho prumyslu). Praha, Czechoslovakia, Vol. 9, No. 2, Feb. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8, August 1959.
Uncla.

S/081/62/000/015/016/038
B168/B101

AUTHORS: Zeman, Stanislav, Krameš, Evžen, Pinkas, Pavel

TITLE: A vertical continuous-working kiln for firing of ceramic and similar ware

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1962, 387, abstract 15K289 (Czechoslovak Patent 98986, March 15, 1961)

TEXT: The design is described. Articles for firing are moved downwards through the kiln channel either as they are (where their size and shape fit it) or in special saggers corresponding to the dimensions of the channel. The articles are so placed that direct movement of hot gases is prevented. These gases are utilized, by means of special channels, for preheating the ware as it enters the kiln. Similar channels in the lower part of the kiln draw in cold air, thereby cooling the fired ware. The firing itself is carried out by means of electric heaters which are insulated from contact with the kiln gases. Special gate valves, whereby the flow of gases in the saggers can be controlled, are used for regulating the temperature in each particular zone of the kiln. The articles are removed from the kiln by

Card 1/2

A vertical continuous-working ... S/081/62/000/015/016/038
B168/B101

means of a special device of usual design. An operating diagram for the kiln is given. [Abstracter's note: Complete translation.]

Card 2/2

ACC NR: AP7002179 SOURCE CODE: UR/0146/66/009/006/0094/0096

AUTHOR: Kramfus, I.R.; Yakushina, S.S.

ORG: Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut)

TITLE: Debugging program for a training computer

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 6, 1966, 94-96

TOPIC TAGS: computer program, training equipment

ABSTRACT:
A debugging program is described which may be used by any three-address computer with automatic address modification. The program, together with the constants, occupies 350 storage locations in the main memory unit. The flow chart for this program contains provisions for automatic code translation for printing operations and arithmetic operation results in decimal code, and logical operation results in octal code. The program execution speed is limited by the speed of the printing unit. On the average 5—6 words are printed for each executed intruction. UDC: 681.14 [WA-81]

SUB CODE: 09/ SUBM DATE: 11Feb66/ ORIG REF: 004
ATD PRESS: 5113
Card 1/1 UDC: none

[illegible]IA, F.

TECHNOLOGY

periodicals: KVASNY PRUMYSL Vol. 5, no. 1, Jan. 1952

[illegible]IA, F. Contribution to the problems of fermenting and storing wine in metal tanks with Upon coating. p. 19

Monthly List of East European Accession (EEAI) LC Vol. 8, no. 5
May 1952, Unclass.

S/169/62/000/003/067/098
D228/D301

3.5000

AUTHORS: Kramich, K. F. and Solov'yev, V. A.

TITLE: Some differences in the characteristics of thunderstorms and showers

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1962, 31, abstract 3B253 (Tr. Gl. geofiz. observ., no. 120, 1961, 52-59)

TEXT: Pecu liarities in the variation of the electrical field during thunderstorms and downpours are considered together with the change in the electrical conductivity of the air; the intensity of thundery and torrential rains is compared; examples of droplet charges are quoted; and some radar characteristics are given for clouds in connexion with their discharge activity. /"Abstracter's note: Complete translation._7

Card 1/1

GOLYAKOVA, L.P.; KRAMIN, K.F.

The radiation factor in the production of thoriated tungsten products by the ceramic metal method. Poroshk. met. 5 no.3:106-110 Mr '65. (MIRA 18:5) [illegible], [illegible].

Elements and ephemeris of the Comet P/Wolf 1 for its reappearance in 19[illegible].
In English. p. 1.
(ACTA [illegible]. Vol. 7, no. 1, 1957, [illegible], [illegible])

SO: Monthly List of East European Accessions ([illegible]) LC. Vol. 6, no. 12, Dec. 1957.
Uncl.