BABUSKA, Ivo.

S/044/62/000/006/053/127
B177/B102

AUTHOR: Babuška, Ivo (ZITNA 25 PRAHA 1)

TITLE: The Fourier transformation in the theory of difference equations in denumerably normed spaces, and some applications

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 104 - 105, abstract 6B446 (Časop. pestov. mat., v. 86, no. 4, 1961, 462 - 479)

TEXT: In RZhMat, 1960, 11602, the author indicated a sufficient condition of solubility, in a space of sequences not higher than the power to which they are raised, of an equation or a system

$$g(n) = \sum_{-\infty}^{\infty} a(1 - n)f(1), \qquad (1)$$

where the complex coefficients a(n) decrease more rapidly than any negative power of $|n|$. This condition was the absence of zeros in an infinitely differentiable periodic function $\det \left\| \sum a(n)e^{in'x} \right\|$. It is found that the

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math. restav Czech Acad Sci

The Fourier transformation in...

S/044/62/000/006/053/127
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same condition guarantees the solubility of system (1) also when $f(n)$ and $g(n)$ are not numbers but elements of a denumerably normed space (the concluding inference is drawn by the author for a Hilbert space). [Abstracter's note: Complete translation.]

Card 2/2

P/508/62/012/001/001/001
D234/D308

2 4 5 2 0 0

AUTHORS: Babuška, I. and Výborný, R. (Prague)

TITLE: Regular and stable boundary points for the problem
                of the equation of heat conduction

SOURCE: Polska Akademia Nauk. Instytut Matematyczny. Annales
                polonici mathematici, v. 12, no. 1, 1962, 91-104

TEXT: The authors refer to a theorem of A. Tikhonov (1938)
and prove a more general theorem that a point is regular for

$$\Delta u = 0 \qquad\qquad (1)$$

if, and only if it is regular for the equation

$$\Delta w = \partial w / \partial t \qquad\qquad (2)$$

It is stated in a note added in proof that similar results are
given by H. Murakami (Proc. Japan Acad. v. 34, 1958, 347-348). The
authors also introduce the notion of stable points, defined as
points y for which the generalized solution of Dirichlet's problem

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Regular and stable ...

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$U(f,y)$ is equal to $f(y)$ for any continuous function f. A domain G is called stable if $U(f,x) = f(x)$ for any continuous f and any $x \in G$. Several theorems are proved, among them the following: the domain G is stable if, and only if the set of unstable boundary points has zero harmonic measure; if a point is stable for (1) it is also stable for (2) and vice versa.

SUBMITTED: December 2, 1959

Card 2/2

44813
S/044/63/000/001/022/053
A060/A000

:9.4740)

AUTHORS: Babuška, I., Práger, M.

TITLE: Reissnerian algorithms in the theory of elasticity

TEXT: The authors consider the problem of plane deformation of a strip
$(-1 \leq x \leq 1, -h \leq y \leq h)$,

$$(\lambda + \mu) \frac{\partial \theta}{\partial x} + \mu \Delta u = 0,$$

$$(\lambda + \mu) \frac{\partial \theta}{\partial y} + \mu \Delta v = 0, \quad \theta = \frac{\partial u}{\partial x} + \frac{\partial u}{\partial y},$$

under the action of forces $f(x)$ and $-f(x)$ parallel to the y axis and distributed
along the edges $y = \pm h$, respectively (the remaining forces on the sides of the
rectangular strip are equal to zero), λ, μ are the Lamé constants. The authors

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....or). A numerical

[...ansiation]   M. G. Slobodyanskiy

Z/026/62/007/006/005/005
D234/D308

AUTHOR: Babuška, Ivo

TITLE: Stability with respect to the definition domain and
               the problem of formulation of the plate problem (pre-
               liminary communication)

PERIODICAL: Aplikace matematiky, v. 7, no. 6, 1962, 463-467

TEXT: The three-dimensional problem for a circular or polygonal
plate (P or P_n) is defined as that of minimizing the functional

$$W(u,v,w) = \iiint_{\Omega_n \text{resp.}\Omega} \left\{ 2\mu \left[\left(\frac{\partial u}{\partial x}\right)^2 + \left(\frac{\partial v}{\partial y}\right)^2 + \left(\frac{\partial w}{\partial z}\right)^2 \right] + \right.$$

$$\left. + \mu \left[\left(\frac{\partial u}{\partial y} + \frac{\partial v}{\partial x}\right)^2 + \left(\frac{\partial u}{\partial z} + \frac{\partial w}{\partial x}\right)^2 + \left(\frac{\partial v}{\partial z} + \frac{\partial w}{\partial y}\right)^2 \right] \right\} dxdy -$$

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Stability with respect ...

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$$- 2 \iint_{P_n \text{ resp } P} f(x,y) \left[w(x,y,h) + w(x,y,-h) \right] dxdy \qquad (1)$$

If u_n, v_n, w_n are the solutions for a polygon and u,v,w those for a circle, then

$$\lim_{n \to \infty} \iiint_{\Omega_n} \left\{ 2\mu \left[\left(\frac{\partial(u_n - u)}{\partial x} \right)^2 + \left(\frac{\partial(v_n - v)}{\partial y} \right)^2 + \left(\frac{\partial(w_n - w)}{\partial z} \right)^2 \right] + \right.$$

$$+ \mu \left[\left(\frac{\partial(u_n - u)}{\partial y} + \frac{\partial(v_n - v)}{\partial x} \right)^2 + \left(\frac{\partial(u_n - u)}{\partial z} + \frac{\partial(w_n - w)}{\partial x} \right)^2 + \right.$$

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Stability with respect ...

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$$+ \left(\frac{\partial(v_n - v)}{\partial z} + \frac{\partial(w_n - w)}{\partial y}\right)^2\bigg]\bigg\} \; dx \; dy \; dz = 0, \qquad (3)$$

which shows that the paradox stated in previous papers of the author is due to inappropriate transformation of a 3-dimensional problem into a 2-dimensional one. The definition and the theorem are generalized by introducing

$$u(x,y,z) = -zp(x,y),$$
$$v(x,y,z) = -zq(x,y),$$
$$w(x,y,z) = w(x,y) \qquad (5)$$

instead of

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Stability with respect ...   Z/026/62/007/006/005/005
                                    D234/D308

$$u(x,y,z) = -z \frac{\partial w}{\partial x} (x,y),$$

$$v(x,y,z) = -z \frac{\partial w}{\partial y} (x,y),$$

$$w(x,y,z) = w(x,y) \qquad\qquad (4)$$

ASSOCIATION: Matematický ústav ČSAV (Institute of Mathematics,
              Czechoslovak AS)

SUBMITTED: April 9, 1962

Card 4/4

L 13245-63
Ps-4/Pr-4/Pu-4   WW   EPR/EWA(h)/EPF(c)/EWT(1)/EPF(n)-2/BDS   AFFTC/ASD/SSD
S/044/63/000/003/026/047

AUTHOR: Babuška, I., Vyborny, R.   (P)   70

TITLE: Regular and   stable boundary points for problems of the heat
conduction equation

PERIODICAL: Referativnyy Zhurnal, Matematika, no. 3, 1963, 60, Abstract 3B270.
(Ann. Polon. Math., v. 12, no. 1, 1962, 91-104, German).

TEXT: Problems of the existence of a solution, and of regular and stable
points for Laplace's equation and the heat conductivity equation are considered.
The concepts of regular and stable regions and points are introduced for these
equations and a number of assumptions concerning solutions of Laplace's equation
and the heat conductivity equation are proved. On the basis of these assump-
tions and a number of evaluations, it is proved that: 1) a boundary point of
a region is regular for Laplace's equation if and only if it is regular for the
heat conductivity equation; 2) a boundary point of a region is stable for the
heat conduction equation if and only if it is stable for Laplace's equation.

Abstracter's [V. Buyvol] comment. The authors call a region regular for
Laplace's equation if a solution of the Dirichlet problem exists in it for any

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L 13245-63

Regular and stable boundary points .....

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function that is continuous on the contour. A point y on the boundary of a region is called regular for Laplace's equation if the equality $\lim_{x \to y} u(f, x) = f(y)$, ($\Delta u = 0$), where x belongs to the region, holds for every f that is continuous on the boundary.

[Abstracter's note: Complete translation.]

Card 2/2

BABUSHKA, Ivo [Babuska, I.]

Optimal quadrature formulas. Dokl. AN SSSR 149 no.2:227-229 My '63. (MIRA 16:3)

1. Matematicheskiy institut Chekhoslovatskoy Akademii nauk. Predstavleno akademikom S.L.Sobolevym.
(Functions)

BABUSKA, Ivo

"Tables of normalized associated Legendre polynomials" by
S.L. Belousov. Reviewed by Ivo Babuska. Aplikace mat. 8
no.4:315 '63.

"Tables of integral error functions and hermite polynomials"
by O.S. Berlyand, R.I.Gavrilova, A.P.Prudnikov. Reviewed by
Ivo Babuska.   315-316

"Tables of sines and cosines to ten decimal places at
thousandths of a degree" by H.E. Salzer, N.Levine. Reviewed
by Izo Babuska.   316

KOLOUSHEK, Vladimir [Koloušek, Vladimir], doktor tekhn. nauk,
     prof.: BABUSHKA, I.[Babuška, I.]; GENRIKH, I.[Henrich, I];
     YERZHABEK,Ya.[Jeřabek, J.]; NOVAK, M.; RYCHAGOV, G.D.,inzh.
     [translator]; YAKUSHEVA, G.A., inzh.[translator];
     PETROPAVLOVSKIY, A.A., doktor tekhn. nauk, prof., red.

     [Structural dynamics. Translated from the Czech] Dinamika
     stroitel'nykh konstruktsii. Moskva, Stroiizdat, 1965. 631 p.
                                                (MIRA 18:5)
     1. Chlen-korrespondent AN Chekhoslovatskoy Sotsialistiche-
     skoy Respubliki (for Koloushek).

L 31830-66   IJP(c)

ACC NR: AP6021182   SOURCE CODE: CZ/0026/65/010/005/0441/0443

AUTHOR: Babuska, Ivo (Doctor of engineering; Doctor of science; Prague)   3o

ORG: Mathematical Institute, Prague (Matematicky ustav CSAV)   B

TITLE: Optimal formulas for the numerical calculation of linear functionals

SOURCE: Aplikace matematiky, v. 10, no. 5, 1965, 441-443

TOPIC TAGS: linear functional operator, mathematic analysis, linear approximation, Banach space

ABSTRACT: The article is a first report on a problem where a Banach space B, a functional $F \in B$ and the series $f_k^{(j)} \in B*$, $k = 0, 1, ..., j; j = 1, 2, ...$ are given. The basic problem of the numerical analysis is approximation of the given functional F by a linear combination of the functional $f_k^{(j)}$. Orig. art. has: 15 formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: 10May65 / ORIG REF: 001

Card 1/1 mc

BABUSKA, Milan, MUDr.

Is the system of school medical servide satisfactory? Cesk. zdravot.
7 no.1:46-49 Jan 59.

1. Metsky ustav narodniho zdravi, Liberec.
        (SCHOOL HEALTH
            serv. in Czech. (Cz))

L 34688-66   EWT(1)

ACC NR: AP6025862   SOURCE CODE: CZ/0023/65/009/003/0302/0305

AUTHOR: Babuska, Vladislav; Ruprechtova, Libuse; Zenklova, Olga

ORG: Geophysical Institute, CSAV, Prague

TITLE: East-alpine earthquake of 2 December 1963

SOURCE: Studia geophysica et geodaetica, v. 9, no. 3, 1965, 302-305

TOPIC TAGS: earthquake, seismography, physical geology

ABSTRACT: This article presents a brief evaluation of the available macroseismic material on the earthquake that occurred on 2 Dec 63, which had its focus ($\emptyset$ = 47.9°N, = 16.4°E) 40 km south of Vienna, and deals with the relation between the shape of the macroseismic field and the geological structure of the quaked area. The authors thank Doctor J. Vanek and Engineer V. Karnik for their valuable advice. They also thank their Austrian, German, and Hungarian colleagues for the macroseismic material they supplied. Orig. art. has: 2 figures. [Orig. art. in Eng.] [JPRS: 32,859]

SUB CODE: 08 / SUBM DATE: 27Oct64 / ORIG REF: 006

Card 1/1 ULR

CZECHOSLOVAKIA / General Biology. Genetics   B-5

Abs Jour   : Ref Zhur - Biol., No 11, 1958, No 47640

Author   : Babuskin, V.
Inst   : Not given
Title   : The Influence of the Experience of Soviet Specialists on
              the Breeding of Domestic Fowl in Czechoslovakia.

Orig Pub   : Druboznictvi, 5, No 11, 168-170 (1957).

Abstract   : No abstract.

Card 1/1

BABUSKOVA, R.

"Statistical methods in numerical calculations"

Aplikace Matematiky. Praha, Czechoslovakia. Vol. 4, no. 2, 1959

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 7, July 59, Unclas

BABUSKOVA, Renata, inz.

Observation on the theory of elasticity. Aplikace mat 6 no.6:463-469 '61.

1. Fysikalni ustav, Ceskoslovenska akademie ved, Praha 6 - Dejvice, Majakovskeho 24.

BABUSKOVA, Renata, inz.

On the numerical stability of some recurrence formulas. Aplikace mat 9 no.3:186-193 '64.

1. Institute of Physics, Czechoslovak Academy of Sciences, Prague 6-Bubenec, Majakovskeho 24. Submitted May 23, 1963.

BABUTIA, I.

Researches on the superficial tension of glycol. Studii chim Timisoara
6 no.3/4:161-165 Jl-D '59.   (EEAI 10:4)

1. Laboratorul de fizica al Institutului politehnic, Timisoara.
        (Ethylene glycol)   (Surface tension)

BORNEAS, M.; BABUTIA, I.

On the superficial tension of liquids in rotary motion, and its
dependence on temperature. Studii chim Timisoara 6 no.1/2:153-
155 Ja-Je '60.   (EEAI 10:3)
          (Liquids)   (Surface tension)   (Temperature)

BABUTIA, I.

New contributions to the study of the rotatory kinetic effect of the superficial tension. Studii mat Timisoara 7 no.1/2:215-220 Ja-Je '60.

(EEAI 10:4)

1. Laboratorul de fizica al Institutului politehnic Timisoara.
   (Surface tension)   (Toluene)   (Benzene)
   (Butyl alcohol)   (Glycols)

BORNEAS, M.; BABUTIA, I.; KALMAN, E.

Studies on the superficial pellicle of some liquids in rotation.
Studii mat Timisoara 7 no.1/2:221-223 Ja-Je '60.   (EEAI 10:4)
        (Surface tension)   (Liquids)

/

BÁBUTIA , I.

The surface tension of glycol. I. Bǎbutia (Polytech. Inst., Timisoara, Romania). *Acad. rep. populare Romîne, Baza cercetǎri stiinţ. Timişoara, Studii cercetǎri stiinţ., Ser. chim.* 6, No. 3-4, 161-5(1959).—The surface tension of glycol was investigated in a series of expts. by means of the du Noüy method, in which the liquid was kept in rotation (at 85 r.p.m., a single ring of 16.6 mm. diam. and 0.6 mm. thickness being used, the liquid being kept in an 8-cm.-diam. glass vessel). The variation of the surface tension of rotated glycol is not linear with the temp.; thus, the formula of Eötvös-Ramsay-Shields does not apply, as in the case of lactic acid (*ibid.* 163). The reproducibility for a no. of measurements was very good, indicating that the temp. is a determinative factor in this phenomenon. In these cases the slope of the lines of the static values *vs.* temp. is the same and so is the curvature of the curves of the rotative values, the initial static values being identical. For several measurements, in the temp. range 7-17°, the curves of the rotative values had different curvatures and different values; this indicates that factors other than temp. affect the phenomena.   M. Ben Elieser

JAT(NB)

BABUTIA, I.

Some additional information on the surface tension of liquids in rotatory motion. Studii chim Timisoara 7 no.3/4:347-352 Jl-D '60.
(EEAI 10:9/10)

1. Institutul politehnic Timisoara, Laboratorul de fizica.

(Liquids) (Surface tension)

BORNEAS, M.; BABUTIA, I.

The surface tensions of liquids in rotatory motion in relation to the decreasing temperature. Studii chim Timisoara 7 no.3/4:353-358 Jl-D '60.   (EEAI 10:9/10)

(Liquids)   (Surface tension)

BORNEAS, M.; BABUTIA, I.

On the surface tension of rotating liquids. Acta physica Pol 20 no.3:187-196 '61.

1. Physical Laboratory, Polytechnic Institute, Timisoara, Roumania.

BORNEAS, M.; BABUTIA, I.

    On the superficial tension of amyl alcohol. Acta physica Pol 18
no.5:521-522 '59.

    1. Laboratoire de Physique, Institut Polytechnique, Timisoara.

BABUTIA, I.; TATU, Gh.

Experimental research on supplementary losses in asynchronous machines. Bul St si Tehn Tim 7:207-212 '62.

OPRENDECK, Bernard, ing.; BABUTIA, Ioan, ing. (Timisoara)

Efficiency of the serial technical control of induction
machines. Electrotehnica 11 no. 11/12:408-415 N-D '63.

1. Chair of Electric Machinery, Polytechnic Institute, Timisoara
(for Oprendeck). 2. Head of the Office of Laboratories, "Electromotor"
Enterprises,Timisoara (for Babutia).

POPOVICI, Alex, ing.; TATU, Gheorghe, ing.; NICOARA, Pavel, ing.;
  BABUTIA, Ion, ing.; CRACIUNESCU, Victor, ing. (Timisoara)

On the reduction of supplementary no-load losses in
asynchronous motors. Electrotehnica 12 no.5:166-171 My'64.

1. Director, "Electromotor" Enterprise, Timisoara (for
Popovici). 2. Assistant Chief, "Electromotor" Enterprise,
Timisoara (for Tatu, Nicoara). 3. Head of the
Laboratories, "Electromotor" Enterprise, Timisioara
(for Babutia). 4. Assistant Chief Designer, "Electromotor"
Enterprise, Timisoara (for Craciunescu).

BABUTSIDZE, V.V.

Indices of business accounting. Put' i put. khoz. 9 no.1:29 '65
(MIRA 18:2)

1. Nachal'nik distantsii puti, stantsiya Makhachkala, Sever-
Kavkazskoy dorogi.

BABUTSIDZE, V.V.

Suggestions should be put into practice. Put' i put.khoz. no.11:20 N '59.   (MIRA 13:4)

1. Nachal'nik distantsii puti, stantsiya Saratov I, Privolzh-skoy dorogi.
   (Saratov--Railroads--Snow protection and removal)

DARAKHVELIDZE, Yu. M.

"Results of the study of sanitary conditions of labor and life of
workers in connection with driven-off sheep-breeding in the
Georgian SSR."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists
and Infectionists, 1959.

BABUTSIDZE, Yu.K. (Tbilisi)

Organization of medical and sanitary services for sheep raisers
on ranges. Sov. zdrav. 19 no. 8:47-52 '60.   (MIRA 13:10)

1. Iz nauchno-issledovatel'skogo instituta sanitarii i gigiyeny
(dir. L.Z. Gomelauri, zamestitel' dirkotora po nauchnoy chasti –
zasluzhennyy deyatel' nauki prof. A.G. Khmaladze) Ministerstva
zdravookhraneniya Gruzinskoy SSR.
                    (PUBLIC HEALTH, RURAL)

BABUTSIDZE, Ya.K.

      Professor A.G.Khmaladze; on his 70th birthday. Sov. zdrav. 20
no.6:96 '61.   (MIRA 14:7)
          (KHMALADZE, ALEKSANDR GEORGIEVICH, 1891-)

BABUTSIDZE, Ya.K.; NATADZE, T.A.; SAMADASHVILI, V.A.; SHALAMBERIDZE,
O.P.; GOMELAURI, L.Z., kand. med. nauk, red.

[Bibliographic index of the works of the Scientific Re-
search Institute of Sanitation and Hygiene]Bibliograficheskii
ukazatel' trudov nauchno-issledovatel'skogo instituta sanitarii
i gigieny, 1926-1960 g. Tbilisi, 1962. 56 p.   (MIRA 16:4)

1. Tiflis. Nauchno-issledovatel'skiy institut sanitarii i
gigiyeny.
(BIBLIOGRAPHY--PUBLIC HEALTH)

35058

P/046/62/007/002/001/003
D256/D302

9,6150 (4/50 1762)

AUTHORS: Grigorov, N.L., Tretyakova, Ch.A., Shestoperov, V.J.,
             Babyan, Kh.P., Bayadzhyan, N.G., Buja, Z., Łoskiewicz,
             J., Massalski, J., and Oleś, A.

TITLE: Integral spectrum of ionization pulses caused by
             nuclear active particles of cosmic radiation at
             mountain altitudes

PERIODICAL: Nukleonika, v. 7, no. 2, 1962, 61 - 73

TEXT: The investigation was conducted in order to obtain informa-
tion concerning: 1) The pulse spectrum and its dependence upon the
dimensions of the apparatus, 2) the altitude dependence of the fre-
quency of the registered pulses, 3) the mechanism of local genera-
tion of π^0 mesons by nuclear active particles. The apparatus cove-
red an area of 10 m^2 and it consisted of 6 horizontal trays of 33
ionization chambers each, the trays being separated by graphite and X
lead absorbers, arranged to enable detection of electromagnetic
cascades created by the decay products of π^0 mesons and evaluation

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Integral spectrum of ionization ...   P/046/62/007/002/001/003
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of the energy transferred in the interactions up to 2×10^{13} ev.
The pulses and pulse heights were recorded photographically from
screens of 6 cathode-ray oscilloscopes with waiting spot. Using me-
chanical selectors it was possible to register subsequently indivi-
dual pulses from all the ionization chambers, each of them being
connected to its own amplifier. The experiments were carried out at
two altitudes: 200 m (Moscow) and 3200 m above the sea level (the
Mountain Station of the Armenian Academy of Sciences at Mount
Aragac). Owing to the independent registration in each ionization
chamber it was possible to divide the registered pulses into two
groups: 1) Single pulses, i.e. events in which the pulse in each
tray was registered by a small number of ionization chambers; 2)
'Structural' pulses defined as events occuring at least in one of
the trays 1 to 4, in such a way that the groups of ionization cham-
bers showing pulses were interspaced with one or more chambers
without any ionization. The first group of pulses was attributed to
nuclear active particles as well as μ mesons, and the second one
could be produced only by groups of nuclear active particles fall-
ing simultaneously on the apparatus, as it was borne out from the

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investigation of the influence of the dimensions of the apparatus used upon the ionization spectra. The dependence of the percentage of the structural pulses upon the registered pulse height was examined, showing that the percentage of the structural pulses is a monotonic function increasing with the increase of the total pulse height registered i.e. with increasing the total energy. In order to assess the role of μ mesons, the altitude dependence was investigated of generating pulses of different nature. The integral spectra were found to be exponential: $N = AI^{-\gamma}$ in the region of pulse heights from 10^3 to 10^5 particles. The following conclusions were derived from the analysis of the experimental results: 1) The spectra induced by nuclear active particles depend essentially on the dimensions of the apparatus and on the pulse heights. The exponent γ of the integral spectrum for pulse heights (measured in numbers of particles) ranging from 2×10^3 to 2×10^5 particles changes from $\gamma = 1.41$ to $\gamma = 2.00$ for the area of the apparatus changing from 330×330 cm^2 to 10×330 cm^2 respectively. 2) At mountain altitudes the exponent γ of the integral spectrum for single nuclear active particles was determined to be $\gamma = 2.01 \pm 0.08$ for $3 \times$

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Integral spectrum of ionization ...   P/046/62/007/002/001/003
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$10^3 \leqslant I \leqslant 3 \times 10^4$, and for all the nuclear active particles including the structural pulses $\gamma = 1.62 \pm 0.04$. 3) The integral spectrum of the large pulses by u mesons is also of an exponential form with $\gamma = 2.22 \pm 0.14$. 4) At the sea level the contribution of the µ mesons constitutes approx. 70 % of all single pulses with a height $\geqslant 2 \times 10^3$ particles and 50 % for heights $\geqslant 2 \times 10^4$ particles. There are 5 figures, 4 tables and 4 Soviet-bloc references.

ASSOCIATION: Institute of Nuclear Physics, University of Moscow;
             (N.L. Grigorov, Ch.A. Tretyakova, and V.J. Shestope-
             rov); Institute of Nuclear Physics, Armenian Academy
             of Sciences, Yerevan; (Kh.P. Babayan, and N.G. Bayad-
             zhyan); Institute of Nuclear Research, Polish Academy
             of Sciences, Cracow; Academy of Mining and Metallurgy,
             Cracow, II Department of Physics (Z. Buja, J. Łoskie-
             wicz, J. Massalski, and A. Oleś)

SUBMITTED: January, 1962

Card 4/4

MKRYAN, G.M.; BABYAN, V.O.; PAPAZYAN, N.A.

Compounds of the acetylenic series from 1,3-dichlorobutene-2.
Part 3. New experimental method for the preparation of methy-
lacetylene. Izv.AN Arm.SSR.Ser.FMET nauk 5 no.1:17-24 '52.
(MIRA 9:7)

1.Khimicheskiy institut Akademii nauk Armyanskoy SSR.
        (Propyne)

BABYANSKAS, M.

"The Prospects for Scientific Research work on Parasitology and
Natural Foci of Infestation in the Lithuanian SSR in 1959 - 1965
in the Light of the Decisions of the Twenty-First Congress of the
CPSS."

Tenth Conference on Parasitological Problems and Diseases with Natural
Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of
Sciences, USSR, Moscow-Leningrad, 1959.

Institute of Zoology and Parasitology, Lithuanian SSR (Vilnius)

DEMIDOV, N.V., doktor veter. nauk; BABYANSKAS, M.A. [Babianskas, M.], kand. veter.nauk; VISHNYAUSKAS, A.Yu. [Vishniauskas, A.], starshiy nauchnyy sotrudnik

Testing hexachlorophene in fascioliasis of shee]. Veterinariia 42 no.10:45-47 O '65.   (MIRA 18:10)

1. Vsesoyuznyy institut gel'mintologii imeni akademika Skryabina (for Demidov). 2. Litovskiy nauchno-issledovatel'skiy veterinarnyy institut (for Babyanskas, Vishnyauskas).

BABYATSKIY, A.Ya., inzh.

Types of transporter cableways. Shakht. stroi. 6 no.12:4-8 D
'62.   (MIRA 16:3)

1. Proyektnaya kontora Prommekhanizatsiya Ministerstva stroitel'stva
UkrSSR.
(Cableways)

BABYATSKIY, A.Ya., inzh.

Circular cableways for dumping with rectangular dump piles.
Shakht. stroi. 9 no.9:9-12 S '65.   (MIRA 18:9)

1. Proyektnaya kontora Prommekhanizatsiya, Khar'kov.

KIL'CHEVSKIY, N.A. [Kil'chevs'kyi, M.O.] (Kiyev); PETRENKO, M.P. (Kiyev);
BABICH, D.V. [Babych, D.V.] (Kiyev); BARSUK, R.P. (Kiyev)

Approximate calculation of longitudinally radial vibrations of
a system of cylindrical shells partially filled with liquid.
Prykl. mekh. 10 no.6:660-663 '64.   (MIRA 18:2)

1. Institut mekhaniki AN UkrSSR.

YUSUPOV, A.M., kand.meditsinskikh nauk; BABYEV, A.A.

Raise the hygienic requirements for urban construction in the republic.
Zdrav. Tadzh. 7 no.4:21-24 Jl-Ag '60.

(MIRA 13:9)

1. Iz.Stalinabadskogo instituta epidemiologii i gigiyeny.
   (TAJIKISTAN—CITY PLANNING—HYGIENIC ASPECTS)
       (TAJIKISTAN—CONSTRUCTION INDUSTRY)

BABYEV, A.N., kandidat tekhnicheskikh nauk; BEL'CHUK, G.A., kandidat
tekhnicheskikh nauk.

Selecting conditions for welding and deposit welding of carbon
steel. Svar. proizv. no.1:8-12 Ja '57.   (MLRA 10:2)

1. Leningradskiy korablestroitel'nyy institut.
        (Steel--Welding)

ISMAYLOVA, F.M.; BABYEV, G.G.

Soils of Kubatly District. Trudy Inst. pochv. i agrokhim.
AN Azerb. SSSR 10:125-158 '61.   (MIRA 15:1)
                    (Kubatly District—Soils)

BAB'YEV, N. N.

USSR (600)

Loading and Unloading

Our experience in mechanizing unloading sugar beets from flatcars. Sakh, prom.
26, no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, ____November____ 195/, Uncl.

2

BAB'YEV, N. N.

"Coefficients of the Transfer of Heat and Moisture in Capillary-Porous Colloid Bodies (New Method of Calculation)." Cand Tech Sci, Moscow Technological Inst of the Food Industry, 10 Feb 54. Dissertation (Vechernyaya Moskva Moscow, 1 Feb 54)

SO: SUM 186, 19 Aug 1954

Bab'yev, N.N.

USSR/Processes and Equipment for Chemical Industries -   K-1
         Processes and Apparatus for Chemical Technology

Abs Jour   : Referat Zhur - Khimiya, No 9, 1957, 33259

Author   : Bab'yev, N.N.

Inst   : Moscow Technological Institute of the Food Industry

Title   : Conjoined Determination of the Coefficients of Heat- and
              Moisture Transfer in Moist Materials.

Orig Pub   : Tr. Mosk. tekhnol. in-ta pishch. prom-sti, 1956, No 6, 48-
              56

Abstract   : A procedure is proposed for a conjoined determination of
              the coefficient of heat transfer (heat conductivity λ,
              thermal diffusivity a, heat capacity C) and coefficient
              of moisture transfer (potential conduction, thermogra-
              dient coefficient δ) in a single experiment, which is
              based on the solution of the problem concerning the hea-
                                                                  ting

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USSR/Processes and Equipment for Chemical Industries -   K-1
        Processes and Apparatus for Chemical Technology

Abs Jour   :   Ref. Zhur - Khimiya, No 9, 1957, 33259

            of a system of 2 bodies (a bounded and a half-bounded
            shaft) by a constant heat flow, and also on some general
            propositions of moisture-exchange in capillary-porous
            bodies. The apparatus consists of a heat-insulated glass
            tube 25 mm in diameter and 150 mm in length, filled to a
            length of 115 mm with paraffin, with the remaining 35 mm
            portion filled with the material (M) under study which
            has a uniform moisture content. Along the axis of the tu-
            be, at the juncture of paraffin and M, and also at the
            middle of the layer of M, are located the hot junctions
            of 2 differential thermocouples, while their cold junc-
            tions are located at a distance of 35 mm from the cold
            end of the paraffin layer. The tube is suspended by
            both end, in horizontal position, from the pans of an
            analytical balance and is equilibrated. The end-face of
            the tube, at the side of the M, is closed by a Cu-plate

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USSR/Processes and Equipment for Chemical Industries -   K-1
            Processes and Apparatus for Chemica Technology

Abs Jour   : Ref Zhur - Khimiya, No 9, 1957, 33259

and is heated by an infrared light bulb. After the bulb
is switched on, periodic determinations are made of the
changes in loads carried by the pans of the balance (due
to a redistribution of the moisture within the sample of
M), and readings of the thermocouples are recorded, after
which all the coefficients are computed according to the
calculation formulas that are given. Depending upon the
nature of M and its moisture content W a determination of
the coefficient of heat transfer requires from 5 to 15 mi-
nutes, and determination of all the coefficients -- from
2 to 3 hours. A study was made of changes in the coeffi-
cients of heat- and moisture transfer in sand, clay, peat
and some M of the food industry, depending on W. It was
found that in the case of all the M the criterion of iner-
tia of the field of humidity in relation to the field of
temperature, varies linearly with W. Criteria of heat

Card 3/4

USSR/Processes and Equipment for Chemical Industries.   K-1
          Processes and Apparatus for Chemical Technology

Abs Jour   : Ref Zhur - Khimiya, No 9, 1957, 33259

conductivity and thermal diffusivity, of moist bodies,
$K_\lambda = (\lambda_e - \lambda)/\lambda$ and $K_a = a_e/a = 1 + K_\lambda$, have been
set, which make it possible to take into account the in-
fluence of moisture transfer on the process of heat trans-
fer; in these criteria λ_e and λ -- the equivalent and
the true coefficient of heat conductivity, a_e and a --
the equivalent and the true coefficient of thermal diffu-
sivity of the moist M. The dependence of K_λ and K_a upon
W has been determined and it is shown that the values of
the criteria have a maximum; with a moisture of the sand
of about 10% the a_e exceeds a by 50%.

Card 4/4

GINZBURG, A.S.; BAB'YEV, N.N.; MIKHAYLOVSKAYA, Ye.I.

Experimental study of the contact drying process of some
materials of the canning industry in a single-roller vacuum
dryer. Trudy MTIPP 16:57-66 '60.   (MIRA 16:6)

(Food, Concentrated)
(Drying apparatus)

GINZBURG, Abram Solomonovich, prof.; MIKHEYEVA, Natal'ya Semenovna;
BAB'YEV, Nikolay Nikolayevich; SYROYEDOV, Viktor Iudovich;
GRACHEV, Yuriy Pavlovich; ZHURAVLEV, Vyacheslav Fedorovich;
DASHEVSKIY, V.I.; FEDOROV, N.Ye., prof., retsenzent;
SEREGIN, P.V., dots., retsenzent; GORBATOV, A.V., dots.,
retsenzent; ROGOV, I.A., dots., retsenzent; KOVALEVSKAYA,
A.I., red.

[Processes and apparatus of the food industry; practical
laboratory work] Protsessy i apparaty pishchevykh proiz-
vodstv; laboratornyi praktikum.[By] A.S.Ginzburg i dr.
Moskva, Pishchevaia promyshlennost', 1964.   270 p.
                                        (MIRA 17:11)
1. Moskovskiy tekhnologicheskiy institut myasnoy i molochnoy
promyshlennosti, kafedra protsessov i apparatov (for Fedorov,
Rogov, Gorbatov). 2. Vsesoyuznyy zaochnyy tekhnologicheskiy
institut pishchevoy promyshlennosti (for Seregin).

VAKULOVA, L.A.; KUZNETSOVA, V.P.; KOLOT, F.B.; BAB'YEVA, I.P.; SAMOKHVALOV, G.I.

Rapid method of quantitative determination of β-carotene in micro-
organisms. Mikrobiologiia 33 no.6:1061-1064 N-D '64.

(MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

DOBROVOL'SKIY, G.V.; BAB'YEVA, I.P.; LOBUTEV, A.P.

Characteristics of moisture, gases, and microflora in flood and
soils. Pochvovedenie no.11:41-54 N '60.   (MIRA 13:11)

1. Moskovskiy gosudarstvennyy universitet.
        (Soil moisture)   (Gases in soils) (Soil micro-organisms)

BAB'YEVA, I.P.

Study of microflora in bottom-land and turf-Podzolic soils of the
upper Klyaz'ma Valley. Nauch. dokl. vys. shkoly; biol. nauki no.3:
185-188 '61.   (MIRA 14:7)

1. Rekomendovana kafedroy biologii pochv Moskovskogo gosudarstvennogo
universiteta im. M.V.Lomonosova.
          (KLYAZ'MA VALLEY—SOIL MICRO-ORGANISMS)

S/020/61/141/006/021/021
B103/B147

AUTHORS: Krasil'nikov, N. A., Corresponding Member AS USSR, Aseyeva,
                I. V., Bab'yeva, I. P., Kaptereva, Yu. V., Shirokov, O. G.,
                and Korshunov, I. S.

TITLE: Biosynthesis of amino acids by soil microorganisms

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 6, 1961, 1480 -
                1482

TEXT: 1290 cultures were studied which consisted of a) bacteria,
b) actinomycetes, and c) yeasts, isolated from USSR soils. Nutrient
media according to T. Asai (see below) were used for a) and b), and
according to J. Lodder (see below) for c). It was found that many
cultures of soil microbes synthesize a single or several amino acids and
excrete them into the nutrient medium. This is true for cultures raised
in synthetic nutrient media containing glucose as carbon source and
ammonium chloride as nitrogen source (apart from small amounts of other
salts). No strong correlation exists between the species of the microbe

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Biosynthesis of amino acids by soil...

S/020/61/141/006/021/021
B103/B147

and its capability of synthesizing amino acids. Different strains of the
same species show a very different behavior in this respect. Neverthe-
less, a connection can be established in individual cases, at least with
the group characteristic of the strains. N. A. Krasil'nikov assumes
that the wellknown actively glutaminic-acid producing strain of
Micrococcus glutamicus also belongs to the actinomycetes. Usually,
several amino acids are exuded into the nutrient media. Cultures
producing only one amino acid are rare. The majority of the active pro-
ducers synthesize alanine. A smaller group of species produces glutaminic
and aspartic acids, and very few produce lysine, valine, cystines, et al.
Both the quantity and the type of the amino acids depend on the composi-
tion of the nutrient medium (particularly on the C and N source, and on
vitamins, trace elements, etc.), furthermore on the conditions of growth
(temperature, aeration, etc.). Some highly active alanine producers
were isolated: four strains of Mycobacterium, which produced from 6 - 8
up to 14 - 16 mg/ml of nutrient medium. Some strains of actinomycetes
produced 8 - 9 mg. Many active yeast strains produced 5 mg/ml. Valine
producers with an activity of 3 - 4 mg/ml were found among a). From the

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Biosynthesis of amino acids by soil...

S/020/61/141/006/021/021
B103/B147

strains considered as possible producers of amino acids, strains with increased activity were isolated by selection, which are able to guarantee industrial production. From Mycobacterium cyaneum which produces almost the same quantities of glutaminic acid and alanine varieties were obtained which synthesize exclusively (or dominantly) either glutaminic acid or alanine. Thus, the yield in glutaminic acid was increased by a multiple. There are 2 figures, 1 table, and 5 references: 2 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: Ref.3: T. Asai, K. Aida, K. Oishi, Bull. Agr. Chem. Soc., 21, No.2, 134 (1957); Ref.4: S. Kinoshita, Advances Appl. Microbiol., 1, 201 (1959); Ref.5: J. Lodder, The Yeasts, Amsterdam, 1952.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
              (Moscow State University imeni M. V. Lomonosov)
              Institut mikrobiologii Akademii nauk SSSR (Institute of
              Microbiology of the Academy of Sciences USSR)

SUBMITTED: September 20, 1961

Card 3/3

BAB'YEVA, I.P.; SAVEL'YEVA, N.D.

Yeasts in the rhizosphere of plants. Mikrobiologiia 32 no.1:
86-93 '63   (MIRA 17:3)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo
universiteta imeni Lomonosova.

BABYKIN, M.A.; GAVRIN, P.F.; ZAVOYSKIY, Yo.K.; RUDAKOV, L.I.; SKORYUPIN, V.A.

Turbulent heating of a plasma in a straight discharge. Zhur. eksp.
i teor. fiz. 47 no.4:1597-1600 O '64.

(MIRA 18:1)

L 04193-67   EWT(m)/EWP(t)/ETI AMP(k)   IJP(c)   JD/JH
ACC NR: AP6028590   (N)   SOURCE CODE: UR/0129/66/000/008/0062/0064

AUTHOR: Raytbarg, L. Kh.; Kozlovskaya, V. P.; Babykina, I. M.; Petrov, Ye. A.   41

ORG: none

TITLE: The dependence of the properties of cold-extruded semifinished products made from aluminum alloys on the billet condition

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 8, 1966, 62-64

TOPIC TAGS: aluminum alloy, extrusion, extruded aluminum, mechanical property, heat treatment, cast structure, annealing, homogenization heat treatment, grain structure, metallographic examination / AD1 aluminum alloy, AV aluminum alloy, AMg aluminum alloy, D1 aluminum alloy

ABSTRACT: Optimal heat treatments were developed for aluminum alloy billets used in making cold-extruded tubes. Alloys AD1, AV, AMg, and D1 were extruded on a mechanical press into tubes having diameters of 15 × 12, 16 × 14, and 16 × 15. The original temperature of 15-20°C increased to 250-350°C after extrusion. Mechanical properties are given for cast, annealed, and homogenized billets and tubes made from each. Cast and previously extruded billets of AD1 and AMg alloys performed identically in tube extrusion; extruded AV alloy billets had better yield strength and reduction in area; and annealed D1 billets had the highest plasticity. Microstructures of cast and ex-

UDC: 620.17:669.716:621.78

Card 1/2

L 04102-67

ACC NR: AP6028590

truded D1 billets and the semifinished tubes made from these were shown. The grain structure of tubes made from cast billets was smaller and more uniform, while those made from extruded D1 billets--large grained and elongated. Optimum quenching temperatures for cold extruded AV tubes were 515-520°C. By heating in a circulating-air pit furnace after quenching, the maximum properties were obtained after holding for 10 min; the properties did not improve if the holding time was increased to 30 min. An increase in quenching temperature from 480 to 500°C for alloy D1 resulted in raising the yield strength by 2 kg/mm^2. Orig. art. has: 1 figure, 2 tables.

SUB CODE: 11,13,20/SUBM DATE: none

Card 2/2

DARIYEV, A.D.; BABUYEVA, TS.M.

Composition of a wide fraction (165 - 195°C) of pyridine bases of
tar obtained in the semicoking of Cheremkhovo coals. Izv. SO AN
SSSR no.11 Ser.khim.nauk no.3:131-134 '63.   (MIRA 17:3)

1. Buryatskiy kompleksnyy nauchno-issledovatel'skiy institut Si-
birskogo otdeleniya AN SSSR, Ulan-Ude.

BABYEVA V. A

COUNTRY	:	USSR
CATEGORY	:	General Biology. B
		Individual Development. Embryonic Development.
ABS. JOUR.	:	RZhBiol., No. 2, 1959, No. 5091
AUTHOR	:	Babyeva, V. A.
INST.	:	-
TITLE	:	The Morphology of the Ganglia of the Solar ~~Web~~ *Plexus*
		in Embryos and Human Fetuses.
ORIG. PUB.	:	Med. zh. Uzbekistana, 1957, No. 10, 53-57
ABSTRACT	:	As development proceeds the quantity of ganglia
		of the solar *plexus* decreases gradually at the ex-
		pense of the fusion of separate units: from 5-16
		(in 3-5 months old embryos) to 2-9 (in 7-9 months
		old fetuses). In the course of time ganglia
		which are initially oval, triangular or spindle
		shaped, become more clearly crescent shaped.
		Their distribution becomes more concentrated and
		the separating intervals become constricted.
CARD:		1/1

BABYKHADIYA, V. D.

TATADZE, Ye.V.;BABYKHADIYA, V.D.

Separation of the sarcomatous kidney. Khirurgiia, Moskva no.9:65-66
Sept 1953.   (CIML 25:5)

1. Of the Department of General Surgery of the Sanitary and Pediatric
Faculties of Tbilisi Medical Institute and of the Second Surgical and
Urological Division of the RTsK Hospital, Tbilisi.

BABYKIN, A. G.

5416

PLANE-PARALLEL SPARK COUNTERS FOR THE MEAS-
UREMENT OF SMALL TIMES. M. V. Babykin, A. G.
Plakhov, Yu. F. Skachkov, and V. V.

investigations of the characteristics
534. counters filled with argon and methyl ether vapor.
(RST)

L 14032-65 EEC(b)-2/EPA(w)-2/EWG(k)/EWT(1)/EEC(t)/EPA(sp)-2/T/EWA(m)-2
Pi-4/Po-4/Pz-6/Pab-10   ASD(a)-5/AFWL/AEDC(b)/AEDC(a)/SSD/ASD(p)-3/AFETR/
ESD(gs)/ESD(t)/IJP(c)   AT
ACCESSION NR: AP4047934   S/0056/64/047/004/1597/1600

AUTHORS: Babykin, M. A.; Gavrin, P. P.; Zavoyskiy, Ye. K.; Ruda-
kov, L. I.; Skoryupin, V. A.

TITLE: Turbulent heating of a plasma in a direct discharge   B

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,
no. 4, 1964, 1597-1600

TOPIC TAGS: turbulent plasma, plasma heating, discharge plasma,
ionized plasma, plasma injection, bremsstrahlung

ABSTRACT: A direct experiment in which the discharge is produced
between end electrodes is reported, aimed at explaining the strong
electron heating observed in an earlier investigation by the authors
(ZhETF v. 46, 1050, 1964), and which cannot be attributed to turbu-
lent heating by the magnetohydrodynamic wave. A current was made
to flow through a fully ionized plasma with density $\sim 10^{12}$ cm^{-3}, pro-

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L 14032-65
ACCESSION NR: AP4047934

duced by plasma injectors. The plasma was adiabatically compressed
by a factor 25 after heating by the current. The magnetic field
at the instant of injector operation and during the direct discharge
was 350 Oe, and rose to 9×10^3 Oe at the maximum of compression.
The electron temperature estimated from the spectral distribution of
the bremsstrahlung is ~200 keV, and the ion temperature ~3 keV. In
addition to the hard bremsstrahlung, neutrons amounting to ~10^5 per
pulse were also recorded. The heating is due to the discharge of
an appreciable fraction of the energy of one of the injectors through
the plasma along the magnetic field to the other injector, occurring
when the electron velocity reaches a certain critical value. The
plasma thus produced was contained in the magnetic mirror during the
entire lifetime of the magnetic field, approximately 2 msec. "The
authors thank A. I. Gorlanov who directly participated in the ex-
periments." Orig. art. has: 4 figures.

ASSOCIATION: None

Card   2/3

L 14302-65
ACCESSION NR: AP4047934

SUBMITTED: 22Jul64

ENCL: 00

SUB CODE: ME   NR REF SOV: 005   OTHER: 000

Card 3/3

BABYKIN, M.V.; GAVRIN, P.P.; ZAVOYSKIY, Ye.K.; RUDAKOV, L.I.; SKORYUPIN, V.A.;
        SHOLIN, G.V.

New results in turbulent heating of a plasma. Zhur. eksp. i
teor. fiz. 46 no.2:511-530 F '64.   (MIRA 17:9)

L 19045-65   EWT(1)/EWG(k)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/EEC(b)-2/EWA(m)-2   Po-4/
PI-4/Pz-6/Pab-10   AEDC(b)/AFETR/ASD(p)-3/RAEM(a)/SSD(b)/AFWL/ESD(gs)/IJP(c)   AT
ACCESSION NR: AP5000307   S/0056/64/047/005/1631/1643

AUTHOR: Babykin, M. V.; Gavrin, P. P.; Zavoyskiy, Ye. K.; Ruda-
kov, L. I.; Skoryupin, V. A.

TITLE: Stability of a turbulently heated plasma during adiabatic
compression

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,
no. 5, 1964, 1631-1643

TOPIC TAGS: plasma confinement, plasma diffusion, bremsstrahlung,
adiabatic trap, plasma trapping, plasma heating

ABSTRACT: This is a continuation of a series of earlier investiga-
tions by the authors (1961 Salzburg Conference, paper No. 209;
ZhETF v. 43, 411, 1547, 1976, 1962 and v. 46, 511, 1964). The pre-
sent paper reports on experiments on adiabatic compression of tur-
bulently heated plasma and investigations of its stability, diffusion

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L 19045-65
ACCESSION NR: AP5000307

transversely to the magnetic field, and bremsstrahlung. The experi-
mental setup is illustrated in Fig. 1 of the enclosure. The maximum
compression magnetic field was 9 kOe, with a half-cycle duration
2.5 msec. The results have led to the following conclusions:
1. Turbulent heating together with adiabatic compression is an ef-
fective means of obtaining a dense high-temperature plasma with
relatively low coefficients of magnetic compression. 2. This plasma
was fully stable in a mirror trap for $\sim$2 msec. The hot plasma oc-
cupied the volume of a cylinder coaxial with the magnetic field of
the trap. The stability is due to the presence of cold plasma, and
the amount of cold plasma obtained by ionization of the residual
neutral gas by fast electrons is sufficient for the stabilization.
3. The upper limit of the velocity of hydrogen plasma transverse
to the magnetic field, determined by the measurement accuracy, is
2 m/sec at $T_e \approx 10$ keV and $n \approx 2 \times 10^{13}$ cm^{-3}. The electron tempera-
ture, determined from the bremsstrahlung radiated from the volume
of the plasma is $\sim$30 keV at the density of $\sim$2 $\times 10^{13}$ cm^{-3}. "The

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L 19045-65
ACCESSION NR: AP5000307

8

authors thank L. V. Groshev, A. M. Demidov, G. V. Sholin, L. V.
Korablev, A. V. Gordeyev, and D. D. Ryutov for useful advice and
V. K. Voytovetskiy for providing a scintillator to register the
bremsstrahlung. The authors thank also A. I. Gorlanov for help in
preparing and carrying out the experiments." Orig. art. has: 9
figures and 3 formulas.

ASSOCIATION: none

SUBMITTED: 24Apr64   ENCL: 01   SUB CODE: ME

NO REF SOV: 007   OTHER: 001   ATD PRESS: 3157
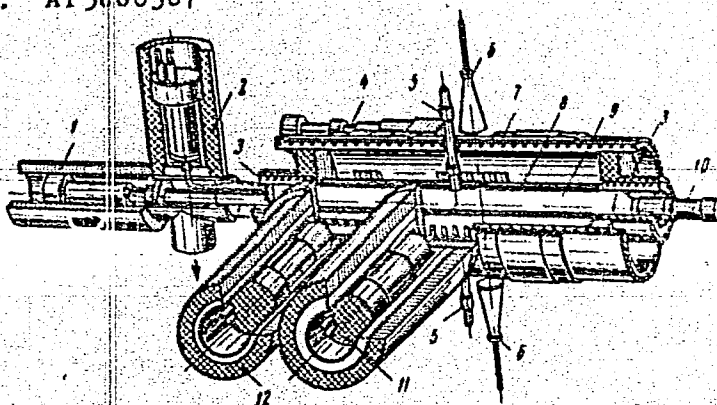
Card   3/4

Fig. 1. Experimental setup

1, 2 - Longitudinal x-ray probes; 3 - magnetic-mirror coils; 4 - mono-
chromator with photomultiplier; 5 - ion probes; 6 - microwave probes;
7 - coil for adiabatic compression; 8 - high-frequency shock excita-
tion circuit; 9 - vacuum chamber; 10 - plasma injector; 11 - scintil-
lation counter with collimator; 12 - monitoring scintillation counter.

Card 4/4

BABYKIN, M.V.; KALINYAK, A.A.; PLAKHOV, A.G.

Results of observations of the solar corona according to
data on the solar eclipse of June 30, 1954. Izv.GAO 20
no.3:67-74 '56.   (MIRA 13:5)
    (Sun--Corono) (Eclipses, Solar--1954)

ACCESSION NR: AP4019216   S/0056/64/046/002/0511/0530

AUTHORS: Baby*kin, M. V.; Gavrin, P. P.; Zavoyskiy, Ye. K.; Ruda-
kov, L. I.; Skoryupin; V. A.; Sholin, G. V.

TITLE: New results on the turbulent heating of plasma

SOURCE: Zhurnal eksper. i teor. fiz., v. 46, no. 2, 1964, 511-530

TOPIC TAGS: plasma, plasma heating, turbulent plasma, heating, plasma
electron heating, plasma ion heating, collisionless plasma heating,
plasma confinement, plasma confinement time, electron confinement
time, ion confinement time

ABSTRACT: This is a continuation of earlier work by the same authors
on turbulent plasma heating in a rapidly alternating magnetic field
(Yaderny*y sintez, Appendix III, 1962; ZhETF, v. 43, pp. 411, 1547,
and 1976, 1962). The present paper reports the results of experiments
with a net setup, the parameters of which have made possible (1)
rapid collisionless heating of the plasma electrons to 1.5 keV by a
strong hydrodynamic wave propagating in the plasma transversely

Card   1/K3

ACCESSION NR: AP4019216

through the magnetic field; (2) investigations of the confinement of a plasma in a magnetic trap; (3) observations of the collisionless heating of ions, which accompanies the turbulent heating of the electrons under certain conditions. The electron temperature was determined from the absorption of the electron bremsstrahlung in thin carbon films, from the ratio of the rates of decay of various spectral lines, and from readings of a probe. The plasma concentration was determined by optical means. The noise produced in the plasma was due to ion cyclotron oscillations and to magnetic sound resonance. A plasma electron pressure of 10^{15} eV/cm^3 (approximately 20% of the alternating magnetic field pressure) was obtained in the concentration range from 10^{12} to 10^{13}/cm^3. Confinement times were $\sim 130 \mu$sec for ~ 100-eV ions and $\sim 60 \mu$sec for 500-eV electrons. No strong instabilities were observed during the time of plasma confinement in the trap. Ion cyclotron waves and natural oscillations of the plasma column were

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ACCESSION NR: AP4019216

observed. A theoretical mechanism is proposed for this electron heating and is found to agree qualitatively with experimental results. Orig. art. has: 17 figures and 10 formulas.

ASSOCIATION: None

SUBMITTED: 13Aug63   DATE ACQ: 27Mar64   ENCL: 01.

SUB CODE: PH   NO REF SOV: 008   OTHER: 002

Card 3/4 3

BABYKIN, M.V.

SUBJECT	USSR / PHYSICS	CARD 1 / 2	PA - 1511
AUTHOR	BABYKIN,M.V., PLACHOV,A.G., SKACKOV,JU.F., SAPKIN,V.V.		
TITLE	Planeparallel Scintillation counters for the Measuring of Short Times.		
PERIODICAL	Atomnaja Energija, 1, fasc. 4, 38-45 (1956)		
	Issued: 19.10.1956		

The hitherto obtained curves for the half width of relative delays amount to $(5-6).10^{-9}$ sec. For a further reduction of the scattering of the delays at least two possibilities are offered: Increase of excess voltage at the counters and decrease of the distance between the electrodes. Besides, the development velocity of the discharge is influenced essentially by the gas used as well as by organic admixtures. In the case of favorable conditions the planeparallel scintillation counters have good counting characteristics: the inclination of the plateau amounts to some % at 100 Volts. The amplitudes of the emitted impulses attain some hundreds of Volts, so that no preamplifiers are necessary. Among their disadvantages there is, above all, the high amount of "dead time". Besides, they are very sensitive to temperature, and have only a certain time of operation. (After from 10^{6} to 10^{8} impulses these scintillation counters must be rinsed out and newly filled). Together with measuring the lift of the excited states of the nuclei it is possible to obtain also data concerning the angular correlation of the $\gamma - \gamma$, $\beta - \gamma$, and $\alpha - \gamma$ -processes.

The structure of the scintillation counters is quite simple: A valve for the

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AUTHORS: Artemenkov, L. I. and Babykin, M. V.

TITLE: Investigation of the Resolving Time of Scintillation
         Counters (Issledovaniye vremennogo razresheniya iskrovykh
         schetchikov)

ABSTRACT: The resolving time characteristics of scintillation coun-
         ters were investigated on about 30 specially prepared samples.
         Most of these were filled with a mixture of O_2 and A and the

         investigation was carried out in a special high pressure
         chamber. The measurement system is shown in Fig.3. The
         counters were situated in the high pressure chamber K at
         a distance of 4 mm from each other. The external electrodes
         of the counters were supplied from stabilised high voltage
         sources through load resistances of 7.5 MΩ. The external
         electrodes were connected directly with the centre conductor
         of a high frequency cable. An electron source was situated
         directly at the internal electrode of the left-hand side

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counter. The electrons had to penetrate three layers of copper foil having an overall thickness of 45 μ and produce discharges of the left-hand side and right-hand side counters. A γ-source was also employed and this was situated outside the pressure chamber. The γ-rays were sufficiently intense to produce secondary electrons in the counters and result in a scintillation discharge. The signals from the counters were applied to two delay lines and then to a fast coincidence circuit. The resulting signal was then amplified and applied to a discriminator where an additional discrimination of coinciding and non-coinciding pulses took place. The experimental results are shown in Figs.4, 5 and 6. Fig.4 shows the curves of delayed self-coincidence which characterise the resolution of the equipment. These were obtained when pulses from one of the counters were applied to the delay line, while both the outputs of the line were connected to the fast coincidence circuit. Fig.5 shows the dependence of the width of the delayed coincidences on the magnitude of the overvoltage applied to the counters; the counters had a gap of .28 mm and were filled with 600 mm Hg of oxygen and 3.7 atm of argon. Fig.6 shows the curves of delayed coincidences for various oxygen-argon mixtures. From the experi-

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ments it was found that the best results can be obtained
when the gap is .1 to .015 mm and when the counter is filled
with a mixture of oxygen and argon; on the other hand, a
mixture of xenon-helium was found to be less satisfactory.
The authors express their gratitude to Ye. K. Zavoyskiy for
valuable advice. The paper contains 6 figures and 5 refer-
ences; 2 of the references are English and 3 are Soviet.

SUBMITTED: November 12, 1957.

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E192/E382

AUTHORS: Artemenkov, L.I. and Babykin, M.V.

TITLE: Analyser for the Time Measurements Employing Spark
Counters

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1,
pp 43 - 47 (USSR)

ABSTRACT: The equipment is based on the device described by
C. Cottini and E. Gatti (Ref 1) but it differs from the
original in that there are no amplifiers preceding or
following the resonant circuits, since even a small
portion of the pulse power from a spark counter is
sufficient to produce an initial amplitude of about
50 V. A block schematic of the equipment is shown
in Figure 1, while its detailed circuit diagram is
given in Figure 2. The pulses produced by the spark
counters are applied to two resonant circuits tuned to
26 and 26.13 Mc/s. The oscillations thus produced are
amplitude-limited by means of limiter valves and are
then applied to a ring phase detector via buffer stages.
The phase of the signal of the difference frequency
appearing at the output of the phase detector is

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proportional to the interval between the exciting pulses.
The phase is measured by a millidiscriminator whose
threshold is in the vicinity of zero. The discriminator
produces an output pulse when the signal of the difference
frequency passes through zero for the first time. This
pulse results in determination of a linear rise of the
voltage on an integrator which is triggered by a delayed
pulse from one of the counters. This delay pulse first
passes through a gating circuit which is controlled by a
coincidence circuit having a resolving time of

10^{-8} sec. The deviation of the pulse amplitude on the
integrator from the value corresponding to an exact
coincidence is proportional to the interval between the
pulses, so that the pulse amplitude distribution, if
measured by a multichannel amplitude analyser, gives the
distribution of the events in time. The amplitude
analyser employed by the authors was the equipment, type
ELA-2, designed by Markov. The authors were principally

interested in the range $\pm$ 2.5 x 10^{-9} sec or the frequencies

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of the order of 200 Mc/s. However, they had to be satisfied with the frequency of 40-50 Mc/s in view of the impossibility of constructing satisfactory amplitude limiters. Consequently, it was decided to use the frequencies of 26 and 26.13 Mc/s so that the measured times were in the range $\pm 1.9 \times 10^{-8}$ sec and it was possible to obtain the lengthening coefficient of 200. The equipment illustrated in Figure 2 was thoroughly screened and was situated in a thermostat whose temperature stability was ± 0.5 deg. The time half-width of the equipment was measured by means of one counter which was applied to both resonant circuits. The half-width was $2\tau = 5 \times 10^{-11}$ sec. The authors express their gratitude to Ye.K. Zavoyskiy for valuable advice and for his constant interest in this work. There are 3 figures and 5 references, 2 of which are Italian and 3 Soviet.

SUBMITTED: January 14, 1959
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BABYKIN, M.V.; GAVRIN, P.P.; ZAVOYSKIY, Ye.K.; RUDAKOV, L.I.;
SKORYUPIN, V.A.

Capture and confinement of a turbulent heated plasma in
a magnetic trap. Zhur. eksp. i teor. fiz. 43 no.4:1547-1549
O '62.   (MIRA 15:11)
                    (Plasma (Ionized gases))
                      (Magnetic fields)

43382
S/056/62/043/005/053/058
B125/B104

AUTHORS: Babykin, M. V., Zavoyskiy, Ye. K., Rudakov, L. I.,
             Skoryupin, V. A.

TITLE: The observation of a two-flow ion instability in the case of
             turbulent plasma heating

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
             no. 5(11), 1962, 1976-1978

TEXT: The method of turbulent heating of the electrons was used for
observing the abnormal scattering of plasma beams (produced by two
titanium guns). The experimental arrangement was described by M.V.Babykin
et al. (ZhETF, 43, 1547, 1962). Two plasma beams (density $2 \cdot 10^{13}$ to
$5 \cdot 10^{13}$ cm^{-3}) travelled in opposite direction inside a quartz tube of 3.6 cm
diameter in a homogeneous magnetic field (600 oe) at the maximum speed of
$1.4 \cdot 10^{7}$ cm/sec, interpenetrating within an oscillatory circuit which served
for the turbulent electron heating. Throughout the entire space between
the guns the electrons were heated to 300-400 ev during 0.2 µsec. The mean

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free path of the hydrogen ions with respect to the Coulomb scattering through the angle $\pi/2$ is found to be several meters. The temperature of the plasma flow emerging from the guns, as measured using a special probe, did not exceed 5 ev, whilst the kinetic energy of the translatory motion of the beam protons reached 100 ev. Such ion temperatures are reached also when two beams collide. As the density of the beam increases, the temperature measured with the probe increased slightly to 10 ev, due to the Coulomb scattering of the ions. The signals recorded by the probe correspond to maximum ion temperatures of 50 ev. The ion temperature decreases at first rapidly and then more slowly as the response of the circuit to the operation of the guns becomes attenuated. The strong mutual scattering of the plasma beams occurs only at high temperatures of the plasma electrons and cannot be explained by Coulomb collisions. Possibly it is due to the scattering of ions from electric microfields which occur within the plasma owing to the instability of the two-flow motion of the ions. There are 2 figures.

SUBMITTED: July 16, 1962

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BABYKIN, M.V.; GAVRIN, P.P.; ZAVOYSKIY, Ye.K.; RUDAKOV, L.I.; SKORYUPIN, V.A.

Turbulent heating of a plasma. Zhur. eksp. i teor. fiz. 43 no.2:
411-421 Ag '62.   (MIRA 16:6)
          (Plasma (Ionized gases)) (Electromagnetic waves)

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E191/E435

10.6300

AUTHORS: Babykin, V.V. and Romanovskiy, Yu.M. (Moscow)

TITLE: Non-linear aircraft wing oscillations when flying in
              disturbed air

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye
              tekhnicheskikh nauk, Mekhanika i mashinostroyenie,
              1961, No.4, pp.83-90

TEXT: The effect of the non-linear properties of several
elastic elements of a wing and movable control surfaces upon the
critical flutter speed has been established in certain cases.
Dry friction in the aileron and rudder hinge and friction in the
control transmission linkage plays a substantial part.   The
relation between the critical speed and the design parameters of
the aircraft is unaffected by dry friction and the limits of
instability regions remain unchanged but vibrations can build up
only with certain initial conditions which depend on the speed.
Since the build-up of flutter depends, in the presence of dry
friction, on initial conditions and thus on the nature of the
external excitation, it is expected that, when flying in disturbed
air, the atmospheric turbulence characteristics may determine the
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Non-linear aircraft wing ...   E191/E435

instant of flutter occurrence and the probability of its
appearance at a given flight speed.   This problem was treated in
another context by P.S.Landa and S.P.Strelkov (Ref.2: Avtom. i
telemekh., 1960, v.XXI, no.10) for non-linearities of the clearance
type in the control transmission.   Inherently non-linear elements
in the structure and control system components may also have a
large effect on the magnitude of various statistical
characteristics of the forced motion of aircraft parts subject to
continuous atmospheric turbulence.   The present paper is a study
of the effect of dry friction in the aileron hinge upon the
oscillations of an elastic wing when the aircraft is flying in
disturbed air.   The purpose of the study is the selection of the
dry friction torque in the aileron hinge so that reliable damping
of forced vibrations is assured and also the examination of the
possibility of preventing flexural-aileron flutter with the help of
dry friction dampers.   Electronic analogue simulating circuits
were used to obtain the results presented in the paper.   In the
analysis, the wing is assumed to perform symmetrical oscillations
in the fundamental mode and the aileron rotational motion as a
solid body with a single degree of freedom.   The mass and moment
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of inertia of the fuselage are considered infinitely large
compared with those of the wing and aileron. The basic equations
describing the flexural oscillations of the wing with the aileron
are taken as the non-dimensional equations obtained by the Bubnov-
Galerkin method with the addition of terms expressing the dry
friction torque in the aileron hinge and external regular or
random disturbances. For the solution, a standard analogue
computer was provided with some special apparatus and the numerical
constants of the aircraft examined by Landa (Ref.2) were
introduced. Flexural aileron oscillations were first examined in
the absence of external disturbances and in the presence of gusts
of a definite shape, considering the effectiveness of dry friction
dampers. In the presence of dry friction, the flutter regions
depend on the amount of friction. At zero initial conditions and
without external disturbances, no oscillations are excited even
inside the flutter regions. The effect of dry friction dampers
outside the flutter regions was examined. The effectiveness of
dampers in vertical gust conditions can be summarized as follows:
(a) the flutter region is sharply reduced even at small amounts of
friction; (b) doubling the friction increases the critical
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