3,5000(2205, 2305, 2405, 1093)

21110
S/531/60/000/114/003/003

AUTHORS: Gandin, L. S., and V. P. Boltenkov

TITLE: On the Use of an Electronic Computer for Constructing Charts

SERIAL: Glavnaya geofizicheskaya observatoriya. Trudy, no. 114, 1960.
          Voprosy dinamicheskoy meteorologii, 90-103

TEXT: Great advantages would accrue to the meteorological service if synoptic and
prognostic charts could be constructed by means of modern high-speed electronic com-
puters. Skilled personnel released from tedious and time-consuming manual work would
then be able to make greater use of their higher skills; the chart would become more
objective, eliminating one of the subjective processes in prediction; there would be
a substantial decrease in the lapsed time between observations and completion of the
chart; and the amount of data employed in the process could be vastly increased.
However, the data used by such a machine must be for a geometrically true network of
points, because it is necessary to correlate the values of different elements as well
as the values of one element at different levels; erroneous data should be eliminated,
and unimportant small-scale disturbances must be smoothed out. Only then can such
data be used for the automated drawing of isolines on a synoptic or prognostic chart.

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Fig. 1 is a flow diagram of the automatic operation of a prognostic center equipped
with high-speed electronic computers. Machine analysis includes: interpolation of
the values of the analyzed elements for points in a true grid; exclusion of errors
detected by comparison of data for different stations; and correlation of the fields
of meteorological elements and smoothing them out. Results of this analysis are
stored in the machine's memory as values applicable to points in a true grid. The
computer itself only finds the coordinates for points on the isolines. An output ac-
cessory projects these points on a special screen where they are photographed. The
author discusses the only two papers which,to his knowledge, deal with the drawing of
isoline charts by similar methods: that by Bedient, who employed a teletype, and that
by Bring, who used a cathode-ray tube. Various shortcomings in their methods and appa-
ratus are indicated. Their use of bilinear interpolation is seriously questioned be-
cause its use results in considerable distortions near the centers of cyclones, anti-
cyclones, hyperbolic points and the axes of ridges and troughs. Specific cases are
cited to prove this point. The method of "bicubic" interpolation is suggested as a
substitute (interpolation within a square using values for the geopotential at the
four corners, as usual, but supplemented with the values for 12 additional grid
points surrounding the square). Bicubic interpolation cannot be used for boundary areas,

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but otherwise its accuracy is substantially greater than in bilinear interpolation.
It is suggested that "optimum" interpolation, as proposed by Gandin (Ref. 3: Trudy
GGO, no. 99, 1959) would yield still better results and the subject is recommended
for further investigation. This method may be usable not only in drawing the isolines,
but also in evaluating the accuracy with which they are drawn. The problem of "over-
loading" of the chart is discussed and methods are proposed to limit the thickness of
the isolines. Fig. 4 is a detailed block diagram of the operation of any electronic
computer in drawing isoline charts of any element. Two programs were worked out for
use with a "Ural I" machine (for a square grid of 11 X 11 points, spaced 300 miles
apart, covering an area of 9 million square kilometers). In the first case, bilinear
interpolation was used for all 100 squares; in the second case, bicubic interpolation
was used for 64 squares (the boundary squares must be excluded). No projecting ac-
cessory was employed. Two examples were computed with each program. The results are
shown in Fig. 5 and 6; each of these charts carry three sets of lines drawn on the
basis of (a) subjective analysis, (b) bilinear interpolation and (c) bicubic inter-
polation. They show that: the isolines do not overload the chart; the lines match
well from square to square; bilinear interpolation is adequate where the field is close
to linear, but that considerable errors are possible near ridges, troughs and pressure

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centers; and bicubic interpolation is for all practical purposes satisfactory. The
machine time for the "Ural I", including printing of the results, was about 4 hours
for bilinear and about 5 1/2 hours for bicubic interpolation; about 20%-25% of this
time was for printing of the results. Use of such a machine without a projecting
accessory would therefore be of little value. Addition of such an accessory to a
"Ural I" would reduce the time expenditure to 4 hours. If a computer with 20,000
operations per second was used instead of the "Ural I" (100 operations per second)
and three-address instruction was used, instead of one-address instruction, the time
required would be reduced to 36 seconds for a 9,000,000 km area; this would there-
fore amount to as little as 4 1/2 minutes for an entire hemisphere if the spacing
of points was doubled. There are 6 figures and 8 references: 3 Soviet and 5 English.

Card 4/4

GANDIN, L.S.; SOLOVEYCHIK, R.E.

On the calculation of evaporation from bounded water reservoirs
with allowance for horizontal intermixing. Dokl.AN SSSR 133
no.5:1070-1072 Ag '60.   (MIRA-13:8)

1. Leningradskiy gornyy institut imeni G.V. Plekhanova. Pred-
stavleno akad. A.A. Dorodnitsynym.
      (Evaporation)   (Reservoirs)

S/169/62/000/007/114/149
D228/D307

AUTHOR: Gandin, L. S.

TITLE: Objective analysis of meteorologic fields

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 49, ab-
            stract 7B262 (Materialy Soveshchaniya Koordinats. ko-
            mis. po chisl. metodam prognoza, L., Gidrometeoizdat,
            1961, 94-105)

TEXT: An account is given of tests of a methodical character on
the interpretation of fields of meteorologic elements by means of
the optimal interpolation method. The optimal interpolation meth-
od's principles are briefly described. The calculations were made
in two stages. The first consisted of calculating the interpolative
weights and theoretical values of the mean quadratic errors of in-
terpolation. This was done by means of the "Ural" computer confor-
mably to the field of the 500-mb surface's geopotential. The
weights and theoretical errors were calculated from data on the
autocorrelative function of the 500-mb surface's geopotential. A

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Objective analysis of ...

graph of the dependence of the interpolative weights on the dis-
tance between the station and the node of the regular grid is gi-
ven. A very great scattering of points occurs on this graph. Hence
the. interpolative weights depend essentially on the relative posi-
tion of the stations and not just on the distance of each of them
to the grid's node, as has been suggested, for example, by Berg-
torsson and Döös (Dëyës) (see Chislennyye metody prognoza pogody
(Numerical methods of weather forecasting), Sbornik perevodov, .
Gidrometeoizdat, 1960). A chart is given, too, for the distribu-
tion of the theoretical errors of interpolation; it illustrates the
essential dependence of the interpolation's accuracy on the station
grid's density. The calculation's second state was also programmed
for the "Ural" machine. 10 geopotential fields were interpolated.
The distribution of differences, averaged from these 10 cases, be-
tween the results of subjective and objective analyses is extremely
like that for the theoretical errors. At the same time examination
of separate cases shows that the optimally interpolated field is
smoother and less liable to small-scale disturbances than the re-
sult of subjective analysis. An example is quoted to illustrate the

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stage of divergence. It is possible to bank on decreasing them by enlisting data on the wind at the isobaric surface under consideration for the analysis of the geopotential fields. /¯Abstracter's note: Complete translation._/

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S/050/61/000/011/002/002
D218/D303

AUTHOR: Gandin, L.S.

TITLE: All-Union meteorological conference

PERIODICAL: Meteorologiya i gidrologiya, no. 11, 1961, 66-68

TEXT: The All-Union meteorological conference took place on July
21-29, 1961, in Leningrad. It was attended by over 1400 meteoro-
logists and workers in allied sciences. Over 450 papers were read
and discussed. The conference was opened by the Chairman of the
organizing committee, Deputy Director of GUGMS K. T. Logvinov,
who reviewed the progress in Soviet meteorology during the last
40 years, and the possible future developments. Among the papers
read at the conference were the following: A.A. Zolotukhin (Di-
rector of GUGMS): "40 Years of Soviet Hydrometeorological Service";
Academician Ye. K. Fedorov spoke about the direct control of wea-
ther and climate; I. M. Dolgin, D. L. Laykhtman, N. P. Rusin and
A. D. Treshnikov (Main Geophysical Observatory) reported on Arctic   /

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All-Union meteorological conference

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and Antarctic research; V. A. Bugayev reviewed the present state
and possible future developments of the synoptic method of weather
forecasting; M. I. Yudin: "Modern methods and problems in the nu-
merical weather forecasting"; B. A. Mirtov and P. G. Khvostikov
spoke on rocket and satellite studies of the atmosphere; M. I.
Budyko reported on the climatological generalization of data in
the thermal balance of the underlying surface in the atmosphere;
A. M. Obukhov spoke on research into atmospheric turbulence; Kh.
P. Pogosyan reviewed research into the general circulation in the
atmosphere, including thermal balance, quantitative forecasting,
etc.; O. A. Drozdov and Ye. S. Rubinshteyn: "A review of research
into the climate of the USSR"; F. F. Davitay spoke on the agro-
climatic resources; P. K. Yevseyev reported on modern computational
techniques in meteorology; The conference was arranged in eight
parallel sections, namely, dynamic meteorology, synoptic meteoro-
logy, physics of the surface layer, physics of the free atmosphere,
actinometry and atmospheric optics, agrometeorology, instruments
and research methods, and climatology. The latter was sub-divided

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into climatography and applied climatology. The full text of all papers will be published later. The resolutions of the conference include a recommendation for a radical improvement in weather forecasting, particularly long-range forecasting, the use of automatic meteorological apparatus, the mechanization of the analysis of meteorological data, and the introduction of quantitative methods into all branches of meteorology.

Card 3/3

GANDIN, L.S.

Principles underlying efficient arrangement of a network of meteoro-
logical stations. Trudy GGO no.111:81-98 '61.   (MIRA 15:1)
                              (Meteorological stations)

GANDIN, L.S.; FATEYEV, A.V.

Analyzing the accuracy of various interpolation methods. Trudy
GGO no.121:19-36 '61.   (MIRA 15:5)
(Meteorological stations)   (Interpolation)

GANDIN, L.S.; KUZNETSOVA, T.I.

Structure of wind and pressure fields in the middle troposphere
for different forms of circulation. Trudy GGO no.121:37-52 '61.

(MIRA 15:5)

(Winds)   (Atmospheric pressure)

41827
S/834/61/037/003/001/005
B104/B186

AUTHORS: Gandin, L. S., Solovoychik, R. E.

TITLE: Distribution of radioactive contaminants in the atmosphere

SOURCE: Leningrad. Gornyy institut. Zapiski. v. 37, no. 3, Moscow,
1961. Matematika, fizika. 30 - 38

TEXT: The steady distribution of radioactive contaminants in the two-
layer system earth - atmosphere is studied with a new approach to the
possibility of determining the position and source strength of subsurface
radioactive sources from observations made in the near-surface layer of
the atmosphere. Assumptions: The radioactive contaminants come from
sources within the earth or on its surface, molecular diffusion and radio-
active decay occurring in the earth. In the atmosphere the contaminants
diffuse turbulently; their decay and their transportation by the wind are
taken into account. The corresponding equations are

$$D\left(\frac{\partial^2 q}{\partial x^2} + \frac{\partial^2 q}{\partial y^2} + \frac{\partial^2 q}{\partial z^2}\right) - \lambda q = 0 \quad (z < 0), \tag{1}$$

and

$$u\frac{\partial q}{\partial x} = k_x \frac{\partial^2 q}{\partial x^2} + k_y \frac{\partial^2 q}{\partial y^2} + k \frac{\partial}{\partial z}\left(z^n \frac{\partial q}{\partial z}\right) - \lambda q. \tag{4}$$

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where q is the concentration of contaminant, D the coefficient of molecular
diffusion in the ground, λ the decay constant; the Cartesian z-coordinate
is directed vertically upward from the earth, u is the wind velocity,
$k_{x,y,z}$ are the turbulent diffusion coefficients. In the introduction,
attention is paid to the boundary conditions (character of the contaminant
concentration at infinity; continuity of the contaminant concentration and
of the contaminant flow across the earth - atmosphere interface, predeter-
mined position and strength of the radioactive sources), and to a method
of successively approximating the solution so as to avoid the need for
cumbersome calculations. In the approximative solution q is substituted
by s_1 = Dq $(z \leqslant 0)$ and s_2 = kq $(z \geqslant 0)$ and the functions s_1 and s_2 are ex-
panded in power series with respect to the small parameter D/k. In the
main part of the paper the distribution of the radioactive contaminants
in the atmosphere at a given flow of contaminants from the earth, is
determined proceeding from the equation (4) for the boundary conditions

$$q\,|_{x-\cdots} = 0,$$
$$q\,|_{y-\cdots} = 0,$$
$$q\,|_{z-\cdots} = 0$$

(5')
(5'')
(5'''),

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$$-k\left(z^n\frac{\partial q}{\partial z}\right)\Big|_{z=0}=P(x,\,y),\qquad(17)$$

with the aid of an integral transformation. With the aid of the designations

$$\frac{u}{k_x}=2a;\quad\frac{k_y}{k_x}=b;\quad\frac{k}{k_x}=c;\quad\frac{\lambda}{k_x}=l.\qquad(18)$$

(4) assumes the form

$$2a\frac{\partial q}{\partial x}=\frac{\partial^2 q}{\partial x^2}+b\frac{\partial^2 q}{\partial y^2}+c\frac{\partial}{\partial z}\left(z^n\frac{\partial q}{\partial z}\right)-lq.\qquad(19),$$

on the condition that the known function $P(x,y)$ is an even function the solution obtained is

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$$q(x, y, z) = \frac{1}{(2-n)^{\frac{n}{2-n}} 2^{\frac{3-2n}{2-n}} \pi \sqrt{k_x k_y} k^{\frac{1}{2-n}} \Gamma\left(\frac{1}{2-n}\right)} \int_{-\infty}^{\infty}\int_{-\infty}^{\infty} p(\xi, \eta) e^{\frac{u}{2k_x}(x-\xi)} \times$$

(44).

$$\times \left\{ \frac{K_{\frac{1}{2-n}}\left[\sqrt{\frac{u^2}{4k_x}+\lambda} \sqrt{\frac{(x-\xi)^2}{k_x}+\frac{(y-\eta)^2}{k_y}+\left(\frac{2}{2-n}\right)^2 \frac{z^{2-n}}{k}}\right]}{\left[\frac{\frac{(x-\xi)^2}{k_x}+\frac{(y-\eta)^2}{k_y}+\left(\frac{2}{2-n}\right)^2 \frac{z^{2-n}}{k}}{\frac{u^2}{4k_x}+\lambda}\right]^{\frac{1}{4-2n}}} + \right.$$

$$\left. + \frac{K_{\frac{1}{2-n}}\left[\sqrt{\frac{u^2}{4k_x}+\lambda} \sqrt{\frac{(x-\xi)^2}{k_x}+\frac{(y+\eta)^2}{k_y}+\left(\frac{2}{2-n}\right)^2 \frac{z^{2-n}}{k}}\right]}{\left[\frac{\frac{(x-\xi)^2}{k_x}+\frac{(y+\eta)^2}{k_y}+\left(\frac{2}{2-n}\right)^2 \frac{z^{2-n}}{k}}{\frac{u^2}{4k_x}+\lambda}\right]^{\frac{1}{4-2n}}} \right\} d\xi d\eta,$$

If $P(x,y)$ is an odd function then only the sign changes in the brackets.
If $P(x,y)$ is assumed to be the sum of an even and an odd function then the
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solution is

$$q(x, y, z) = \frac{1}{(2-n)^{\frac{n}{2-n}} 2^{\frac{3-2n}{2-n}} \pi \sqrt{k_x k_y} k^{\frac{1}{2-n}} \Gamma\left(\frac{1}{2-n}\right)} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} e^{\frac{u}{2k_x}(x-\xi)} \times \qquad (47).$$

$$\times \left\{ P(\xi, \eta) \frac{K_{\frac{1}{2-n}}\left[\sqrt{\frac{u^2}{4k_x^2}+\lambda} \sqrt{\frac{(x-\xi)^2}{k_x}+\frac{(y-\eta)^2}{k_y}+\left(\frac{2}{2-n}\right)^2 \frac{z^{2-n}}{k}}\right]}{\left[\frac{\frac{(x-\xi)^2}{k_x}+\frac{(y-\eta)^2}{k_y}+\left(\frac{2}{2-n}\right)^2 \frac{z^{2-n}}{k}}{\frac{u^2}{4k_x^2}+\lambda}\right]^{\frac{1}{4-2n}}} + \right.$$

$$\left. + P(\xi, -\eta) \frac{K_{\frac{1}{2-n}}\left[\sqrt{\frac{u^2}{4k_x^2}+\lambda} \sqrt{\frac{(x-\xi)^2}{k_x}+\frac{(y+\eta)^2}{k_y}+\left(\frac{2}{2-n}\right)^2 \frac{z^{2-n}}{k}}\right]}{\left[\frac{\frac{(x-\xi)^2}{k_x}+\frac{(y+\eta)^2}{k_y}+\left(\frac{2}{2-n}\right)^2 \frac{z^{2-n}}{k}}{\frac{u^2}{4k_x^2}+\lambda}\right]^{\frac{1}{4-2n}}} \right\} d\xi d\eta.$$

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The analysis and acceptability of solution (47) for calculating the dis-
tribution of the contaminant flow on the earth's surface may be made the
subject of a special study. In particular the socalled "inverse problem",
as mentioned at the beginning, may be of extraordinary importance.

Card 6/6

GANDIN, L.S. (Leningrad); KUROCHKIN, A.F. (Moskva)

Use of the method of full flows in the atmosphere. Meteor. i
gidrol. no.9:7-12 S '62.   (MIRA 15:8)
                              (Weather forecasting)

GANDIN, L.S.

      Optimum conformation of meteorological fields. Trudy GGO.
no.124:3-17 '62.

      Operative methods for computer analysis of meteorological
fields. Ibid.:18-29   (MIRA 17:6)

GANDIN, L.S.; KAGAN, R.L.

Accuracy of determining the mean depth of the snow cover from discrete
data. Trudy GGO no.130:3-10 '62.   (MIRA 15:7)
                    (Snow surveys)

GANDIN, L.S.

Optimum parameters of wind motors. Trudy GGO   no.131:10-14
                                                              (MIRA 15:6)
'62.
                                    (Windmills)

AM4008929   BOOK EXPLOITATION   S/

Gandin, Lev Semenovich

Objective analysis of meteorological fields (ob"yektivnyy* analiz meterologiches-
    kikh poley) Leningrad, Gidrometeoizdt, 63. 0286 p. illus., biblio.   Errata
    slip inserted. 1,500 copies printed.

TOPIC TAGS: meterology, synoptic meteorology, weater forecasting, dynamic
meteorology, diagnostic weather map, prognostic weather map, objective analysis,
computer application to meteorology

PURPOSE AND COVERAGE: The monograph is devoted to applications of modern computer
techniques for the construction of meteorological fields, both for automatic pre-
paration of the initial data for numerical forecasting and for automatic con-
struction of diagnostic and prognostic maps. Its purpose is automatic reconstitu-
tion of the fields of meteorological elements from data obtained at the points of
observation, using high speed computers. Several related problems, particularly
the meteorological field structure and rational distribution of a network of
stations, are also discussed. This is claimed to be the first book in this field
in both the Soviet and non-Soviet literature. The book is intended for a large
circle of meteorologists and therefore employs simple mathematics. It is aimed

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at scientific workers in the field of synoptic and dynamic meteorology, and at
graduate and undergraduate students in these fields. Several sections of the
book can also be used to teach basic meteorological disciplines.

TABLE OF CONTENTS [abridged]:

SUB CODE: MM, CC, SD   SUBMITTED: 04Jun63   NR REF SOV: 058

OTHER: 059   DATE ACQ: 28Oct63   -

Card   2/2

GANDIN, L.S.

       Static control of aerological telegrams. Meteor.i.gidrol. no.9:
       31-33 S '63.   (MIRA 16:10)

       1. Glavnaya geofizicheskaya observatoriya.

ACCESSION NR: AT4016874   8/2531/63/000/143/0130/0137

AUTHOR: Bagrova, Ye. I., Gandin, L. S.

TITLE: Method for computation of wind norms in the middle troposphere

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy*, no. 143,
1963, Voprosy* chislennogo prognoza i struktura meteorologicheskikh poley (Pro-
blems in numerical forecasting and structure of meteorological fields), 130-137.

TOPIC TAGS: meteorology, wind, troposphere, weather forecasting, isobaric sur-
face, atmospheric geopotential, geostrophic wind.

ABSTRACT: A method is proposed for computing wind norms on the basis of the
norms for the geopotential of isobaric surfaces. "Norms" are the mean long-term
mean monthly values. Objective analysis of wind fields requires a knowledge of
wind distribution over the area of interest, which in turn requires knowledge
of the mean wind vector, or the mean values of its two components. Such data
are unobtainable from handbooks. An indirect computation method therefore is·
presented for determination of wind field norms, based on the assumption that
the norms of the real wind coincide with the norms of the geostrophic wind;
there is no basis to assume their noncoincidence. Norms are determined from a

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limited sample. Norms of the geostrophic wind are computed directly from a
chart of norms for the isobaric surface of interest. This is done very pre-
cisely by a method described. The 500-mb surface was used; isobars were
smoothed subjectively where the pattern was complex. Transformations required
for conversion of computed data to the zonal and meridional components of the
geostrophic wind are discussed; suitable formulas are presented, but tables
can be used in practice. Charts of the norms of the zonal and meridional wind
components at the 500-mb surface were prepared for each month (24 charts).
Accuracy of the method was checked against the Upper Wind Statistics Charts of
the Northern Hemisphere. Orig. art. has: 3 formulas, 3 figures and 3 tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya (Main Geophysical Obser-
vatory)

SUBMITTED: 00   DATE ACQ: 20Feb64   ENCL: 00

SUB CODE: AS   NO REF SOV: 002   OTHER: 002

Card 2/2

GANDIN, L.S.; KAGAN, R.L.

Accuracy of determining the mean value from discrete data.
Trudy GGO   no. 112:87-99 '63.   (MIRA 17:5)

GANDIN, L.S.; MELESHKO, V.P.; MESHCHERSKAYA, A.V.

Use of universal digital computers in studying the statistical
structure of meteorological fields. Trudy GGO no.143:113-
129 '63.   (MIRA 17:2)

GANDIN, L.S.

Theoretical meteorological parameters of the heat emission
from buildings. Trudy GGO no.149:16-28 '63.

(MIRA 17:1)

GANDIN, L.S.; SOLOVEYCHIK, R.E. (Leningrad):

"On the propagation of radioactive emanation in the atmospheric
boundary layer."

report presented at the 2nd All-Union Congress on Theoretical and Applied
Mechanics, Moscow, 29 Jan - 5 Feb 64.

KIBEL', I.A., red.; GANDIN, L.S., doktor fiz.-mat. nauk, red.;
    NEDOSHIVINA, T.G., red.

[Transactions of the Symposium on Numerical Methods of
Weather Forecasting, Moscow, 1963] Trudy Simpoziuma po
chislennym metodam prognoza pogody. Leningrad, Gidro-
meteoizdat, 1964. 234 p.   (MIRA 17:12)

1. Simpozium po chislennym metodam prognoza pogody, Moscow,
1963.

GANDIN, L. S.; BAGROVA, Ye.I.; ZAKHAROVA, M.N.; MESHCHERSKAYA, A.V.

Static control of aerological telegrams. Trudy GGO no.151:3-16
'64   (MIRA 17:7)

GANDIN, L.S., doktor fiz.-matem. nauk; BOLTENKOV, V.P.

Methodology of studving the three-dimensional macrostructure
of meteorological fields. Trudy GGO no.165:5-15 '64.

(MIRA 17:9)

GANDIN, L.S.; BOLTENKOV, V.P.

Methodology of objective analysis of actinometric information
from meteorological satellites. Trudy GGO no.166:235-246 '64.
(MIRA 17:11)

L 13503-65   EWT(1)/FCC   ASD(d)/ESD(dp)   GW

ACCESSION NR: AT4047187   8/25.   .000/165/0005/0015

AUTHOR: Gandin, L. S.   (Doctor of physico-mathematical sciences)Boltenkov, V.P.

TITLE: A method for investigating the three-dimensional macrostructure of
meteorological fields

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy*, no. 165,
1964. Primeneniye statisticheskikh metodov v meteorologii (Use of statistical
methods in meteorology), 5-15

TOPIC TAGS: meteorological field, meteorological structural function,
meteorological correlation function

TRANSLATION: During recent years, there have been numerous investigations of the
macroscale statistical structure of meteorological fields. It has been possible
to increase the information on the statistical properties of atmospheric
characteristics appreciably, and solve a number of applied problems. However,
in almost every case, the authors studied only the structural and autocorrelation
functions describing the internal properties of each meteorological element, and
not the relationship between different elements. For the most part, these
authors studied the "horizontal" or "vertical" statistical structure, that is,

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functions describing the statistical properties of a meteorological field either in a certain horizontal plane (or isobaric surface) or along the vertical. However, for the solution of many applied problems, such as the objective analysis of meteorological fields and the classification of synoptic processes, it is necessary to know the characteristics of the spatial (three-dimensional) structure of the fields of the principal meteorological elements. In this paper, the authors propose a method for determining such characteristics by the use of high-speed digital computers. This work is based in large part on earlier work by L. S. Gandin and his associates. The machine used performed 20,000 operations per second; the subprograms and program used are described fully and block diagrams are presented. The computer printed out eight groups of numbers representing the values of the functions in gradations and three numbers necessary in further analysis: 1) values of the structural function; 2) values of the correlation function; 3) number of cases used for finding the values of the functions; 4) distance to which the values of the functions apply; 5) mean square deviations of the structural function; 6) mean square deviations of the correlation function; 7) corrected values of the structural function; 8) corrected values of the correlation function; 9) dispersion of the meteorological element; 10) value of the structural function when $\rho = 0$; 11) value $A_f(p_1, p_2)$

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for a particular pair of levels. The program described was used to compute
more than 100 correlation functions of air temperature at a number of levels
in various combinations of levels and for different seasons. The use of the
method is illustrated for the case of air temperature structural and correlation
functions for summer at the 500-mb surface. Computation of the structural and
correlation functions on a computer using 3,600 measurements of the meteoro-
logical element (60 siutations with data for 60 stations each) requires 15
minutes machine time, while manual computations require several months. Orig.
art. has: 3 figures and 1 table.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main Geophysical
Observatory)

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

NO REF SOV: 002   OTHER: 000

Card 3/3

L 13501-65   EWT(1)/FCC   GW
ACCESSION NR: AT4047191   S/2531/64/000/165/0047/0059

AUTHOR: Gandin, L. S. (Doctor of physico-mathematical sciences)

TITLE: Optimal interpolation of vector fields

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya, Trudy, no. 165, 1964.
Primeneniye statisticheskikh metodov v meteorologii (Use of statistical methods
in meteorology), 47-59

TOPIC TAGS: geostrophic wind, optimal interpolation, wind, vector field inter-
polation

ABSTRACT: If an objective analysis of the wind field is made, guided by the re-
quirement that there be a minimum mean square error in analysis, it is necessary
to carry out an optimal interpolation of the wind at the intersections of a regular
grid using data for the stations carrying out aerological sounding. If each wind
component is considered as a scalar meteorological element, homogeneous and iso-
tropic relative to a correlation function, wind interpolation can be accomplished
using the ordinary formulas of optimal interpolation of scalar fields (L. S.
Gandin, Ob optimal'noy interpolyatsii i ekstrapolyatsii meteorologicheskikh poley,
Tr. GGO, No. 114, 1960). However, it is known that it does not necessarily follow
from the statistical homogeneity and isotropy of some vector value that there is
Card 1/2

L 13501-65
ACCESSION NR: AT4047191

a statistical homogeneity and isotropy of each of its components. The correlation of some component of a statistically homogeneous and isotropic vector field at two points is dependent not only on the distance between points, but also on the angle between the direction of the considered component and the direction of a segment connecting the two points. The author analyzes this dependence for two-dimensional vector fields. In the formulation of the problem there are two points M_1 and M_2 and a vector $\vec{P}$ connecting these points, forming the angle α with the x-axis. The error in determination of the vector $\vec{c}$ (the vector component in the direction $\vec{P}$) is analyzed. Optimal interpolation of the vector $\vec{c}$ is illustrated. It is noted that the use of the optimal interpolation method described is suitable for interpolation of the geostrophic wind; a numerical example is cited. Orig. art. has: 72 formulas, 2 figures and 3 tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main Geophysical Observatory)

SUBMITTED: 00   ENCL: 00   SUB CODE: ES

NO REF SOV: 002   OTHER: 000

Card 2/2

L 44325-65   EWT(1)/FCC   GS/GW   S/0000/64/000/000/0173/0188

ACCESSION NR: AT5009058

AUTHOR: Gandin, L. S. (Doctor of physico-mathematical sciences)

TITLE: Problems in objective analysis of the fields of meteorological elements

SOURCE: Simpozium po chislennym metodam prognoza pogody. Moscow, 1963. Trudy.
Leningrad, Gidrometeoizdat, 1964, 173-188

TOPIC TAGS: meteorology, objective analysis, numerical forecasting, radiosonde,
computer control

ABSTRACT: The purpose of this report is to review the present status and future
prospects for various aspects of objective analysis. The most important steps in
objective analysis are interpolation, coordination of meteorological fields,
inspection of initial data for finding and eliminating gross errors and processing
the data. The three methods of interpolating--polynomial approximation, successive
approximation and optimal interpolation are described. The method of polynomial
approximation developed by Cressman (1959) and widely used in the U. S. and in
Japan is not used in the Soviet Union. Since May 1961 operational numerical fore-
casts of geopotential fields have been made by the Computer Meteorological Center

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L 44325-65
ACCESSION NR: AT5008058

in Moscow using objective analysis data. The several different methods of object-
ive analysis including "reverse" interpolation are discussed and compared.
Tabulated values of mean standard deviations between results of interpolation by
various methods and observed values show that with a dense station network all
reasonable methods of interpolation give about the same accuracy. With a sparse
network optimal interpolation is the most accurate, but the accuracy is still
clearly insufficient. The author's formula for correlating diagnostic and prog-
nostic values is given and discussed. The correlation can be verified by com-
paring the values for an artificially "thinned out" network and the numerical fore-
cast with an analysis made for the entire dense network. The more complicated
process of correlating the wind and geopotential in quasigeostrophic models must
be done on the basis of the divergence equation in the solenoidal approximation.
A method of interpolation of the wind field is presented and equations are derived
for the evaluating interpolation errors. Graphs of the isolines for correlation
functions of the geostrophic wind are given. Methods are described for eliminat-
ing errors in aerological soundings due to faulty instrumentation, errors in the
initial processing of the results and distortions in transmission of the data. A
block diagram is given for a computer program used for processing telemetered aero-
logical information. Tabulated results of checking 453 telemetered tapes show that

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L 44325-65
ACCESSION NR: AT5008058

more than 20% contain gross errors; with processing methods developed by the Main Geophysical Observatory this percentage was reduced to 4.6%. The last section of the report discusses the application of objective analysis to meteorological fields other than those serving as source data for numerical forecasts. This will require automation of initial processing of radiosonde data and of the work of forecasting centers. Orig. art. has: 2 figures, 3 tables and 9 equations.

ASSOCIATION: none

SUBMITTED: 06Oct64   ENCL: 00   SUB CODE: ES, DP

NO REF SOV: 015   OTHER: 012

Card 3/3

USPENSKIY, B.D.,doktor fiz.-mat. nauk, prof.; BELOUSOV, S.L., kand.
fiz.-mat. nauk; PYATYGINA, K.V.; YUDIN, M.I.; MERTSALOV,
A.N., kand. fiz.-mat. nauk; DAVYDOVA, O.A.; KUPYANSKAYA,
A.P.; PETRICHENKO, I.A.; MORSKOY, G.I.; TOMASHEVICH, L.V.;
SAMOYLOV, A.I.; ORLOVA, Ye.I.; DZHORDZHIO, V.A.; PETRENKO,
N.V.; DUBOVYY, A.S.; ROMOV, A.I.; PETROSYANTS, M.A.; GLAZOVATA,
G.P., BATYAYEVA, T.F.; BEL'SKAYA, N.N.; CHISTYAKOV, A.D.;
GANDIN, L.S.; BURTSEV, A.I.; MERTSALOV, A.N.; BAGROVYY, N.A.;
BELOV, P.N.; ZVEREV, A.S., retsenzent; SIDENKO, G.V., red.;
red.; DUBENTSOV, V.R., kand. fiz.-mat. nauk, nauchn. red.;
SAGATOVSKIY, N.V., red.; BUGAYEV, V.A., doktor geogr. nauk,
prof., red.; ROGOVSKAYA, Ye.G., red.

[Manual on short-range weather forecasts] Rukovodstvo po
kratkosrochnym prognozam pogody. Leningrad, Gidrometeoizdat.
Pt.1. Izd.2., perer. i dop. 1964. 519 p. (MIRA 18:1)

1. Moscow. TSentral'nyy institut prognozov.

GANDIN, Lev Semenovich, doktor fiz.-matem. nauk; BOYKOVA, A.G.,
red.

[A machine predicts the weather] Mashina predskazyvaet
pogodu. Leningrad, Gidrometeoizdat, 1965. 168 p.
(MIRA 18:8)

GANDIN, L.S.

General problems on the optimum interpolation and extrapolation
of meteorological fields. Trudy GGO no.168:75-83 '65.

(MIRA 18:8)

GANDIN, L.S.; KUZNETSOVA, T.I.

Space statistical structure of the geopotential field. Trudy CGO
no.168:84-93 '65.   (MIRA 18:8)

GANDIN, I.S.; BUGAT. P.M.; LIBERMAN, Yu.M.; YUDIN, M.I.

Accuracy of determining finite differences in the analysis of meteorological fields. Trudy GGO no.168:113-122 '65.

(MIRA 18:8)

GANDIN, L.S.

Theory of the unsteady loss of heat of buildings. Trudy GGO no.173:24-28 '65.
(MIRA 18:8)

BUDYKO, M.I.; GANDIN, L.S.

Theory of evaporation in the presence of plant cover. Trudy GGO
no.179:172-179 '65.
(MIRA 18:8)

L 3453-66   EWT(1)/FS(v)-3   DD

ACCESSION NR: AP5024010   UR/0020/65/164/002/0454/0457

AUTHOR: Budyko, M. I. (Corresponding member AN SSSR); Gandin, L. S.

TITLE: On the theory of photosynthesis in a layer of plant cover

SOURCE: AN SSSR. Doklady, v. 164, no. 2, 1965, 454-457

TOPIC TAGS: calculus, solar photosynthesis, plant respiration, computer application, carbon dioxide

ABSTRACT: In continuation of earlier work on calculation of total photosynthesis by considering the regular processes of carbon dioxide diffusion and irradiation distribution in a plant layer, the author presents some generalizations of the earlier theory and the results of calculations based on this theory. The initial formula is

$$A_z = \rho k \, dc / dz, \qquad (1)$$

where A_z is the vertical current of CO_2 gas in the layer at the z level, ρ the air density, k is the coefficient of turbulent exchange, c the CO_2 concentration in the

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L 3453-66

ACCESSION NR: AP5024010

leaf interspace. Further development introduces other factors, such as Q- the current of photosynthetically active radiation, D''- the integral diffusion coefficient of CO_2 from leaf interspace to the adsorbing elements of the leaf, s- the leaf surface unit. The developed formula

$$A = A_H + A_0 + \int_0^H es \, dz, \qquad (11)$$

where A is the total assimilation and A_H is the vertical CO_2 current at the H level, is applied to the cases of : 1) well ventilated cover in the absence of CO_2 from the soil; and, 2) well illuminated cover in which conditions of light saturation are met at all levels. A computer was used for solving these equations. Curves are shown for total assimilation as a function of photosynthetically active radiation (PAR), D'' and k. From these it appears that for low PAR values, total assimilation depends almost exclusively on PAR. For high PAR values, this is determined by D'' and s. Low D'' is an important factor for assimilation while high D'' reduces the importance of this factor. For curves referring to the

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L 3453-66

ACCESSION NR: AP5024010

effect of k, the leaf is considered well ventilated if $K_1 = \geqslant 5$ cm. sec^{-1}.
Orig. art. has: 17 formulas and 3 figures

ASSOCIATION: Glavnaya geofizicheskaya observatoriya im. A. I. Voyeykova.
(Main Geophysical Observatory)

SUBMITTED: 12Mar65   ENCL: 00   SUB CODE: LS

NR REF SOV: 002   OTHER: 000

BVK
Card 3/3

BUDYKO, M.I.; GANDIN, L.S.

Effect of climatic factors on the plant cover. Izv. AN SSSR. Ser.
geog. no. 1:3-10 Ja-F '66   (MIRA 19:2)

1. Glavnaya geofizicheskaya observatoriya imeni A.I. Voyeykova.

L 01756-67   EWT(1)   GW

ACC NR: AT6029351

SOURCE CODE: UR/2531/66/000/191/0005/0017

AUTHOR: Gandin, L. S.

ORG: none

33
BH

TITLE: Large scale atmospheric processes and the problem of station networks

SOURCE: Leningrad. Glavnaya geofisicheskaya observatoriya. Trudy, no. 191, 1966. Primeneniye statisticheskikh metodov v meteorologii (The application of statistical methods in meteorology), 5-17

TOPIC TAGS: practical meteorology, weather station, statistic analysis, interpolation, correlation statistics

ABSTRACT: The evolution and the status of investigations on quantitative determination of station network spacing appropriate for recording large scale atmospheric processes is discussed. Methods of several authors are analysed. Calculations have been carried out to determine the maximum permissible distance between stations to obtain aerological data relating to the altitude of isobaric surfaces. The methods of optimum interpolation and objective analysis of meteorological fields have been applied to determine what degree of refinement a new station would add to available information. There is some basis for the quantitative approach to solving the problem of appropriate station spacing, but need for further study is indicated before final recommendations

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L 01756-67

ACC NR: AT6029351

0

can be made. Calculations applicable to meteorological elements having great spatial variability, such as wind and humidity, need to be carried out. Estimating methods which take into account agreement between meteorological fields need to be worked out. Yudin's concept of refining information on the statistical structure by directly determining correlation and structural functions of different characteristics of meteorological fields in order to increase accuracy of estimates should be considered. If it is necessary to set up several stations in a given area, their optimum distribution may even have to be determined by trial. The economics of maintaining stations in different areas must certainly be considered. Orig. art. has: 5 figures, 2 tables and 18 equations.

SUB CODE: 04, 12/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 003

Card 2/2   pb

L 07903-67   ENT(1)   GW

ACC NR: AT6029352   (N)   SOURCE CODE: UR/2531/66/000/191/0018/0021

AUTHOR: Gandin, L. S.; Kagan, R. L.

ORG: none

TITLE: Approximation for characteristics of a statistical structure

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 191, 1966. Primeneniye statisticheskikh metodov v meteorologii (The application of statistical methods in meteorology), 18-21

TOPIC TAGS: meteorology, statistic analysis, interpolation, correlation function

ABSTRACT: Statistical characteristics such as correlation and structural functions are important in the theory of random functions as applied to meteorological problems. The parameters of these characteristics are determined by the statistical treatment of experimental material. The authors demonstrate, for a one-dimensional case, how an interpolation for a meteorological element can be made by using measurements of this element at equidistant points. The optimal interpolation suggested by Gandin is used, based on the method of least squares. It is also shown that the data on statistical structure can be used for finding the formulas of optimal integration; however, the construction of the correlation functions requires more detailed information than needed for the solution of a concrete problem. Orig. art. has: 13 equations.

SUB CODE: 04, 12/ SUBM DATE: none/ ORIG REF: 002
Card 1/1

L 24692-66   EWT(m)/EWP(w)/EWA(d)/T/EWP(t)   IJP(c)   JD

ACC NR: AP6015829   SOURCE CODE: UR/0286/65/000/019/0072/0072

INVENTOR: Kribosheyev, A. Ye.; Koteshov, N. P.; Parshin, A. I.; Rudnitskiy, L. S.;
Knyazhanskiy, M. U.; Rudnev, O. N.; Gandzha, G. A.

ORG: none

TITLE: Alloyed cast iron. Class C 22c; 40b, 37 sup oo B 21b; 7a,19, No. 175236

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 72

TOPIC TAGS: cast iron, hardness, wear resistance, chemical composition, iron alloy

ABSTRACT: An alloy cast iron is proposed with high wear resistance and hardness
which has the following chemical composition (in %): 3.8 C (max), 0.3-0.7 Si,
2.0-3.5 Mn, 0.05-0.3 Cr, 1.2-2.2 Ni, 0.3 Ti (max) and 0.4 P (max). [JPRS]

SUB CODE: 11, 20, 07 / SUBM DATE: none

Card 1/1   UDC: 669.15-196:771.2-233.12

GANDINA, I.A.   (Leningrad)

Structure and variations of Brenner tumor. Arkh. pat. 25 no.7:
13-17 '63   (MIRA 16:12)

1. Iz patologoanatomicheskogo otdeleniya bol'nitsy "V pamyat'
25-go Oktyabrya" (glavnyy vrach I.P.Yushmanov) i kafedry Pa-
tologicheskoy anatomii Gosudarstvennogo instituta dlya uso-
vershenstvovaniya vrachey imeni S.M. Kirova (zav. - prof. P.V.
Sipovskiy), Leningrad.

GANDINA, I.A.

Histogenesis of dysgerminomas. Vop. onk. 11 no.4:26-30 '65.

(MIRA 18:8)

1. Bol'nitsa "V pamyat' 25 Oktyabrya" (glavnyy vrach - V.A.
Tvaradzo, nauchnyy rukovoditel' - prof. M.F.Glazunov).

GANDLER, A.V

ACHERKAN, N.S.; YERMAKOV,V.V.; IGNAT'YEV, N.V.; KAUFMAN, L.M.; PUSH, V.E.;
    FEDOTENOK, A.A.; KHARIZOMENOV, I.V.; KHRYKOZ, A.N.; VLASKIN, F.S.;
    kandidat tekhnicheskikh nauk, dotsent; GANDLER, A.V.; kandidat
    tekhnicheskikh nauk, dotsent; ALEKSEYEV, P.G., kandidat tekhni-
    cheskikh nauk.

    "Machine tools" by V.A.Bravichev and others. Reviewed by N.S.
    Acherkan and others. Vest.mash. 37 no.5:87-91 My '57.   (MLRA 10:5)

    1.Kafedra "Metallorezhushchiye stanki" Moskovskogo stankoinstrumen-
    tal'nogo instituta (Acherkan, Yermakov, Ignat'yev, Kaufman, Push,
    Fedotenok, Kharizomenov, Khrykoz)
                            (Machine tools)

GANDLEVSKIY, M.; BREN, I., prepodovatel'

Simplified method of journal-voucher accounting system.
Obshchestv.pit. no.11:12-14 N '59.   (MIRA 13:3)

1. Glavnyy bukhgalter Kiyevskogo tresta stolovykh g.Khar'kova
(for Gandlevskiy). 2. Institut sovetskoy torgovli (for Bren).
    (Kharkov--Restaurants, lunchrooms, etc--Accounting)

GANDLEVSKIY, M.

Less paper work, simpler accounting. Obshchestv.pit. no.1:
Ja '60.   (MIRA 13:5)

1. Glavnyy bukhgalter tresta stolovykh Kiyevskogo rayona,
g.Khar'kov.
        (Restaurants, lunchrooms, etc.--Accounting)

GANDLEVSKIY, M.D.

In the Central Institute of Scientific and Technical Information
on Machine Building. NTI no.3:5-6 '64.

(MIRA 17:9)

532

PHASE I BOOK EXPLOITATION

Gandlevskiy, Mark Moiseyevich

Silovoy sledyashchiy privod (The Power Servomechanism) Moscow, Oborongiz,
1957. 197 p. 10,600 copies printed.

Reviewer: Gordeyev, D. I.; Candidate of Technical Sciences, Docent;
    Ed.: Grigorash, K. I.; Ed. of Publishing House: Petrova, I. A.;
    Tech. Ed.: Zudakin, I. M.; Managing Ed.: Sokolov, A. I., Engineer.

PURPOSE: This monograph is addressed to students enrolled in technical schools
    and may prove useful to a wide circle of engineers and technicians con-
    cerned with problems of automatic control and specializing in related
    fields.

COVERAGE: Basic servomechanism theory, principles of operation, and servo-
    mechanism components of the most advanced servomechanisms are discussed.
    Essential physical considerations in the control process, as well as the
    more complicated problems of determining servomechanism stability, are
    also examined. The purpose of the present work is to examine in the

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The Power Servomechanism   582

simplest way possible a number of problems connected with the basic components
and operating principles of servomechanisms. In addition to basic theory, the
problems of frequency analysis and determination of system stability are dis-
cussed. The author states that an attempt is made throughout to keep the dis-
cussion at the level of the technical school student without sacrificing
accuracy in presenting the basic concepts of current automatic control science.
Where necessary, appropriate explanations of the mathematics involved are
given. The following types of selsyns are presented in tabular form with
specifications: contact selsyns of the SS-404, -405, -501, and DI-501, -511
types; mag-slips of the BD-404A and -501A types, and BS-404A, -405, and -501A
types (p. 29). Design data are given of the following d-c motor types: the
MI-11, 12, 21, 22, 31, 32, 41, 42, 51, 52. Design data are given on the
ASM-50, 100, 200 and 400 type two phase, asynchronous motors. The TD-102 and
TG-2M type tachogenerators with independent excitation are mentioned. The
author expresses his thanks to Lecturer Gordeyev, D. I., Candidate of Techni-
cal Sciences and to the Commission on Curriculum of the Izhevsk Industrial
Technical School for their valuable suggestions in the review of the manu-
script. (p. 4) The Soviet scientists A. G. Iosif'yan, and D. V. Svecharnik
are mentioned in connection with the mag-slip, the design of which they pro-
posed in 1938. Mikhaylov is mentioned in connection with his criterion for
Card 2/7

The Power Servomechanism

582

system stability. There are 16 Soviet references, 4 of which are translations.

582

The Power Servomechanism

Card 4/7

The Power Servomechanism   582

Card 5/7

The Power Servomechanisms   582

Card 6/7

The Power Servomechanisms   582

AVAILABLE: Library of Congress (TJ214.G3)

JP/aak
9-26-58

Card 7/7

MARKOVA, Z.S.; KRONGAUZ, Ye.A.; SHMYREVA, T.V.; GANDMAN, M.G.;
BUDNITSKAYA, Z.S.

Non-germinating properties of the spores in a Bac. megatherium
var. phosphaticum culture. Mikrobiologiia 31 no.1:103-110
Ja-F '62.   (MIRA 15:3)

1. Moskovskogo otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo
instituta sel'skokhozyaystvennoy mikrobiologii.
                     (BACILLUS MEGATHERIUM)

SUDAKOVA, L.V.; KRONGAUZ, Ye.A.; GANDMAN, M.G.; BELOVA, V.K.

Study of the effect of various contaminants on the growth of Bac. megaterium, var. ghosphaticum. Prikl. biokhim. i mikrobiol. 1 no. 6:717-721 N-D '65.   (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii, Moskovskoye otdeleniye. Submitted May 20, 1965.

GANDURIN, I.

Results of discussing the practice of Kalinin textile workers.
Sots. trud 8 no.2:98-103 F '63.   (MIRA 16:2)
        (Kalinin Province—Wages—Textile workers)

GANDURIN, I.

Schedule which makes worker's labor easier. Sots. trud 8 no.6:20-27
Je '63.   (MIRA 16:9)
        (Textile industry) (Shift systems)

GANDURIN, L.I., aspirant; SADOV, F.I., prof.

Investigating various reducing agents under the conditions of two-phase printing with vat dyes. Tekst. prom. 23 no.12: 55-59 D '63.
(MIRA 17:1)

1. Kafedra khimicheskoy tekhnologii voloknistykh materialov Moskovskogo tekstil'nogo instituta.

SADOV, F.I., prof.; GANDURIN, L.I., aspirant

Investigating various reducing agents under the conditions of
the two-phase metnod of vat dye printing. Tekst.prom. 24 no.1:
72-77 Ja '64.
(MIRA 17:3)

1. Moskovskiy tekstil'nyy institut.

MOLOSNOVA, M.I.; GANDYBINA, L.A.; PETROSYANTS, M.A.

Temperature relations in the mountains of Central Asia and in
the free atmosphere during the summer invasions of coldness.
Trudy Sred.-Az. nauch.-issl. gidrometeor. no.23:55-65 '65.
(MIRA 19:2)

L 32726-66

ACC NR: AP6005371   (N)   SOURCE CODE: UR/0413/66/000/001/0117/0117

                                                                    17

INVENTOR: Gandyul, V. D.   B

ORG: None

TITLE: Separable vacuum-tight joint. Class 47, No. 177713

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 117

TOPIC TAGS: vacuum tight, seal, joint, vacuum tight joint

ABSTRACT: An author certificate has been issued for a separable vacuum-tight joint of two members containing a flexible soft metal ring seal. To improve the technological properties and reliability of the joint, the working surfaces of the members to be joined are cone-shaped, and one of them has a ring-seal shoulder.

SUB CODE: 13/ SUBM DATE: 15Oct64

Card 1/1   JS   UDC: 62--762.445

GANDZHA I. M.

5309. GANDZHA I. M. Concentration of penicillin in the bile after various methods of administration Sovietskaya Meditsina, Moscow 1949, 11 (10-12) Tables 4

A preliminary report giving the results of determinations of the penicillin concentration in the bile after duodenal and intramuscular administration. After duodenal application, the penicillin concentration is higher in the bile than in the blood. If the liver function is normal, duodenal administration gives higher penicillin levels in the bile than intramuscular injection. The highest concentration was detected in the B fraction of bile; the concentration remained constant for 2 to 3 hours, whereas variations in the penicillin contents of C and A fractions were observed, depending on various factors. The functional condition of the liver seems to influence the penicillin level in the C fraction, and the pH causes the variations in the A fraction. The penicillin level of blood is low after duodenal administration and falls rapidly after a short time. The duodenal contents, however, retain a concentration as high as 40 units per ml. for 3 hours at least.

Fuks - Zagreb (II, 6)

SO: Excerpta Medica, Section II Volume III No. 9

Div of Functional Path, Inst of Clincal Med Ukrainian SSR.

MIKHN'OV, A.L.; GANDZHA, I.M.

Academician M.D.Strazhesko.   Medych.zhur. 21 no.6:5-13 '51
(MIRA 11:1)

(STRAZHESKO, MYKOLA DMYTROVYCH, 1876-)

GANDZHA, I.M., kandidat meditsinskikh nauk

Metabolism disturbances in allergy and histamine administration.
Vrach.delo no.2:165-168 F '56.   (MLRA 9:7)

1. Kafedra terapii II (zaveduyushchiy professor A.L.Mikhnev),
Kiyevskogo instituta usovershenstvovaniya vrachey i otdel funktsio-
nal'noy patologii Ukrainskogo instituta klinicheskoy meditsiny imeni
akademika N.D.Strashesko.
          (METABOLISM, DISORDERS OF)   (HISTAMINE)   (ALLERGY)

MIKHNEV, A.L., professor; GANDZHA, I.M., starshiy nauchnyy sotrudnik (Kiyev)

Etiology and pathogenesis of biliary cirrhosis. Vrach.delo no.11:
1131-1139 N '56.   (MLRA 10:3)
        (LIVER--CIRRHOSIS)

GANDZHA, I.M. (Kiyev)

Myocarditic and vascular lesions in Botkin's disease. Vrach.delo
no.11:1143-1150 N '56.   (MLRA 10:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut klinicheskoy
meditsiny im. akademika N.D.Strazhesko.
        (HEPATITIS, INFECTIOUS)   (HEART--DISEASES)
        (BLOOD VESSELS--DISEASES)

USSR/Human and Animal Physiology (Normal and Pathological).
          Blood Circulation. General.

/

Abs Jour: Ref Zhur-Biol., No 17, 1958, 79521

Author : Gandzha, I.M.
Inst   :
Title   : Changes of the Cardio-Vascular System During Illnesses
          of the Liver and the Digestive Tracts.

Orig Pub: Materialy po obmenu nauchn. inform Ukr n.-i. in-t
          klinich. meditsiny, 1957, vyp. 1, 57-58.

Abstract: No abstract.

Card   : 1/1

USSR/Human and Animal Physiology (Normal and Pathological).
        Blood Circulation. General.

Abs Jour: Ref Zhur-Biol , No 17, 1958, 79522.

Author : Gandzha, I.M.
Inst   :
Title   : Change of Several Indicators of Hemodynamics in
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          klinich. meditsiny, 1957, vyp. 1, 59-60.

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GANDZHA, I.M. (Kiyev)

Changes in blood volume in liver diseases. Vrach.delo supplement
'57:13   (MIRA 11:3)

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         (BLOOD VOLUME) (LIVER--DISEASES)

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Mechanisms of involvement of the cardiovascular system in chronic cholecystoangiocholitis. Vrach.delo no.1:31-34 Ja '58. (MIRA 11:3)

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686. AFFECTIONS OF THE MYOCARDIUM IN LESIONS OF PROTEIN METAB-
      OLISM (Russian text) - Gandzha I. M. - SOV. MED. 1958, 1 (78-82)
Researches made on 6 cases of myxoedema, 56 cases of epidemic hepatitis, and
53 cases of liver cirrhosis, investigating the total blood proteins, albumin-
globulin ratio, blood-fibrinogen, Weltmann and Takata-Ara reactions, sometimes
Tiselius electrophoresis, and constantly ECG, confirm the literature data of myo-
cardial affection in hypo-dysproteinaemic states. ECG shows systolic elongation,
inconstant ST modification, constant T aplatization, the latter proportionally to
γ-globulin increase. In α- and β-globulin increase, systolic elongation was always
observed, whereas T wave flattening was less frequently seen, often only in the
orthostatic position. In one case necropsy verified clinical and laboratory findings.
High protein food, besides specific therapy, made most of the myocardial dis-
orders reversible without completely normalizing the dysproteinaemic tests.
                                                  Harth - Baciu (XVIII, 6)

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