ARGIR, I., dotsent

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ZHIVKOV, B. S.; ABOIROV, D. K.

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1. Senior Assistants. 2. Eye Clinic (Head -- Docent D. Danailov), V. Chervenkov Medical Academy, Sofia.
ARGIROV, D., et. assistant


Director: doct. D. Danilov.

(ALLERGY, experimental,
*eff. of sulfur in colloidal solution in cod liver oil)
(SULFUR, effects,
*on exper. allergy, in colloidal solution in cod liver oil)
(FISH LIVER OILS, effects,
*cod liver oil, on exper. allergy, with sulfur in colloidal solution)


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ARGIROV, D.

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(TUBERCULOSIS, OCULAR, therapy, sulfur in fish liver oil in scrofulous keratoconjunctivitis (Bul))

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Case of traumatic peripheral opthalmoplegia with abnormal regeneration of the involved nerves. Khirurgia, Sofia 10 no. 12:1118-1120 1957.

I. (Is kliikkata po ochki bolesti pri VMI--Sofiia) (MUSCLES, OCULOMOTOR, paralysis, abnorm. regen. of nerves (Bul))
ARGIROV, D.; STOIANOV, S.l.

Experience in establishment of the tuberculous etiology of eye diseases by the Middlebrook-Dubos hemagglutination reaction.
Khirurgia, Sofia 14 no.9:825-829  '61.


(TUBERCULOSIS OCULAR immunology) (HEMAGGLUTINATION)
Metabolic changes during the irradiation of the organism with various doses of roentgen rays. Nauch. tr. vissh. med. inst. Sofia 39 no.7: 177-186 '60.

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(RADIATION INJURY metab)
ARGIROV, Ml. D.


1. Predstavena ot prof. Z. Mitsov, rukovoditel na Katedra "22".

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(NERVOUS SYSTEM physiol)
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(MIRA 1812)
ARGIROVA, Tatiana; GENCHEV, Todor

On certain properties of the series of Jacobi polynomials.
Godishnik fiz 55 no.1:199-204 '60/'61 (publ. '62)

In most calculations of electromagnetic ground waves the range of the transmitter has to be determined for a given field value or field field relations. In such cases the Sommerfeld-Van der Pol formula cannot be used in its original form. This formula in its explicit form for the range is a complete cubic equation which can be solved on a logarithmic slide-rule if it is expressed as a trinomial. For approximate calculation the equation has been transformed for three boundary conditions and a max. relative error of 12% was found. Curves of propagation according to K. A. Norton are given in nomogram form. Numerical examples illustrate the method of calculation.

A new analytical method of calculating the propagation of ground waves over an inhomogeneous soil. Based on the formula for the numerical distance in the field equation, it is proved that the total numerical distance $\rho$ equals the sum of the particular distances. This is true up to the point where the total numerical distance exceeds its critical value which is $\rho_{c} = \pm 2.74$. In this case, the negative roots for the numerical distance resulting from the quadratic equation defining $\rho$ must be taken into account. By means of two examples of the calculation of theoretical curves for field attenuation, the causes for the irregular shape of these curves (i.e., the field intensification with distance) at the propagation over sea and shore are shown, which irregularity could not be fully explained hitherto. The formula for the equivalent conductivity enables a simple method of measuring the single values of the conductivity of inhomogeneous soils to be used in the case if $\rho < \rho_{c}$. 

\textit{E. P.}
ARGIROVIC, N.

"The application of topograms in the calculus of meshworks." p. 3 (ELEKTROTEHNIŠKI VESTNIK, Vol. 21, no. 1/2, 1953, Ljubljana.)

Effect of variations in the conductivity of soil on induced charges in telecommunication lines. p. 1.


ARGIROVIC, M.


ARGIROVIC, M.

ARGIROVIC, M. Extension of Sabine's formula; atmospheric influence on acoustic constants. p. 1

Vol. 5, no. 3, Aug. 1956
TELEKOMUNIKACIJE
TECHNOLOGY
Beograd

Sot: East European Accession, Vol. 6, no. 3, March 1957
ARGIROVIC, M.


ARGIROVIC, M.

Impedance of overhead lines and cables in reference to the earth. p. 1161.

(TEHNIKA. Vol. 12, No. 7, 1957, Beograd, Yugoslavia)

TEXT: The study of absorption, refraction and reflection in heterogeneous media is of particular significance in research on the propagation of electromagnetic waves. The article reviews these coefficients in the series and parallel connection of electric constants of a heterogeneous medium, as well as some factors which affect their changes in the course of time. Strictly speaking, homogenous media through which electromagnetic waves propagate do not exist in nature. In their propagation over the earth's gaseous belt, electromagnetic waves practically always encounter more or less heterogeneous media. For the purpose of simplifying the calculation, the heterogeneous nature of the medium in question is dis-
Absorption, refraction and ... regarding. The author's aim is to show that the concept of equivalent constants, coefficients and factors can be applied to heterogeneous media which will simplify considerably the calculations and allow a more precise consideration of main factors which affect the propagation of electromagnetic waves. The author cites L. Bloch (Ref. 1; Précis d'électricité théorique (Essay on Theoretical Electricity), Gauthier - Villars, Paris 1935) to show that for a homogeneous conductivity medium \( \sigma \), dielectric constant \( \varepsilon \), magnetic permeability \( \mu \), and frequency \( f \), characterized by complex dielectric constant (in ESJ)

\[
\varepsilon_c = \varepsilon - j \frac{\sigma}{f}
\]

(1)

the absorption coefficient is

\[
\alpha^2 = \frac{\mu}{2} \left( \sqrt{\varepsilon^2 + 4\sigma^2/f^2} - \varepsilon \right)
\]

(2)

the absorption at distance \( d \)

\[ a = \alpha d \]

(3)
Absorption, refraction and ...

The refractive index

\[ n^2 = \frac{1}{2} \left( \gamma^2 + 4 \epsilon_0 \sigma^2 + \epsilon \right) \]  \hspace{1cm} (4)

and the coefficient of reflection, i.e. the relation between the reflected and the incident surface at normal incidence

\[ r = \frac{(n - \mu)^2 + \sigma^2}{(n + \mu)^2 + \sigma^2} \]  \hspace{1cm} (5)

or with the Fresnel equation for a smooth straight surface at incidence angle \( \psi \) (Ref. 2: G. Goudet, and J. Voge, Rayonnement et propagation des ondes électromagnétiques de courte longueur d'onde (Range and Propagation of short electromagnetic waves), La revue d'optique, Paris, 1948)

\[ r = \rho \cos \Phi = \frac{m \sin \psi - \sqrt{\epsilon_r - \cos^2 \psi}}{m \sin \psi + \sqrt{\epsilon_r - \cos^2 \psi}} \]  \hspace{1cm} (6)
Absorption, refraction and ...

where \( m = 1 \) for horizontal polarization and \( m = \varepsilon_c \) for vertical polarization. The relations between \( \alpha \) and \( n \) are (Ref. 1: Op.cit.)

\[
\begin{align*}
\alpha^2 &= \varepsilon^2 + \mu \varepsilon \\
\varepsilon^2 &= \varepsilon_c^2 - \mu \varepsilon \\
\varepsilon &= \frac{\mu \varepsilon}{1}
\end{align*}
\]

(7) \hspace{2cm} (8) \hspace{2cm} (9)

In a heterogeneous medium with different conductivities \( \sigma_1, \sigma_2, \ldots, \sigma_n \), dielectric constants \( \varepsilon_1, \varepsilon_2, \ldots, \varepsilon_n \) (taking \( \mu = 1 \)) with corresponding absorption coefficients \( \alpha_1, \alpha_2, \ldots, \alpha_n \), at distances \( d_1, d_2, \ldots, d_n \), with \( d = d_1 + d_2 + \ldots + d_n \) and designating with index "e" the equivalent coefficients the author cites his own work (Ref. 3: Apsorpciija (Absorption), Telekomunikacije, br. 3, juli 1955) to show a series connection of absorption (Fig. 1a)

**Fig. 1a.**

<table>
<thead>
<tr>
<th>( d_1 )</th>
<th>( d_2 )</th>
<th>( d_n )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( d_1 )</td>
<td>( d_2 )</td>
<td>( d_n )</td>
</tr>
</tbody>
</table>

**Sl. 1a**
Absorption, refraction and ...

\[ a_n d = a_1 d_1 + a_2 d_2 + \cdots + a_n d_n = \sum_{n} a_n d_n \]  \hspace{1cm} (10)

or

\[ s_n = s_1 + s_2 + \cdots + s_n = \sum_{n} s_n \]  \hspace{1cm} (11)

and at parallel connection of absorptions (Fig. 1b)

Fig. 1b.

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Absorption, refraction and ... we have

\[
\frac{1}{a_c d} = \frac{1}{a_1 d_1} + \frac{1}{a_2 d_2} + \ldots + \frac{1}{a_n d_n} - \sum_{n} \frac{1}{a_n d_n} \tag{12}
\]

or

\[
\frac{1}{a_d} = \frac{1}{a_1} + \frac{1}{a_2} + \ldots + \frac{1}{a_n} = \sum_{n} \frac{1}{a_n} \tag{13}
\]

with

\[
a^2 = \frac{1}{2} \left( \sqrt{a_1^2 + a_2^2} - a_1 \right) \tag{14}
\]

Absorption on the basis of Eq. (9) will be

\[
a = \alpha d = \frac{\varphi d}{4} . \tag{15}
\]

On the other hand according to the Descartes Law for the different Card 6/16.
Absorption, refraction and ...

refractive indices \( n_1, n_2 \ldots n_n \):

\[ n_1 \sin \beta_1 = n_2 \sin \beta_2 = \ldots = n_n \sin \beta_n = n_e \sin \beta_e. \] (16)

For different refractive indices Eq. (15) gives at series connection of refractive indices (Fig. 2a)

Fig. 2a.
Absorption, refraction and ...

\[
\frac{\sigma_e d}{n_e} = \frac{\sigma_1 d_1}{n_1} + \frac{\sigma_2 d_2}{n_2} + \ldots + \frac{\sigma_n d_n}{n_n} - \sum_n \frac{\sigma_n d_n}{n_n} \tag{17}
\]

and with Eq. (16) the author obtains

\[
\sigma_e d \sin \beta_e = \sigma_1 d_1 \sin \beta_1 + \sigma_2 d_2 \sin \beta_2 + \ldots + \sigma_n d_n \sin \beta_n - \sum_n \sigma_n d_n \sin \beta_n \tag{18}
\]

At parallel connection he has similarly (Fig. 2b)

\[
\frac{n_s}{\sigma_s d} = \frac{n_1}{\sigma_1 d_1} + \frac{n_2}{\sigma_2 d_2} + \ldots + \frac{n_n}{\sigma_n d_n} - \sum_n \frac{n_n}{\sigma_n d_n} \tag{19}
\]

and

\[
\frac{1}{\sigma_s d \sin \beta_s} = \frac{1}{\sigma_1 d_1 \sin \beta_1} + \frac{1}{\sigma_2 d_2 \sin \beta_2} + \ldots + \frac{1}{\sigma_n d_n \sin \beta_n} - \sum_n \frac{1}{\sigma_n d_n \sin \beta_n} \tag{20}
\]
Absorption, refraction and ...

Fig. 2b.

From the Eqs. (17) or (19) the author determines $n_e$ and by means of (18) or (20) $\beta_q$. On the basis of Eq. (6) in the case of a se-
Absorption, refraction and ... y/001/60/000/001/001/001
ries connection of the coefficient of reflection (Fig. 3b)

Fig. 3b

the following can be expressed:

\[ r_n = \rho_n e^{i\phi_n} = \rho_1 \cdot \rho_2 \ldots \rho_n e^{i(\phi_1 + \phi_2 + \ldots + \phi_n)} = \prod_{n} \rho_n e^{i\phi_n} \tag{21} \]
Absorption, refraction and ...

\[ r_a = r_1 \cdot r_2 \cdots r_n = \Pi r_n \] \hspace{1cm} (22)

or also

\[ r_e^2 + r_2^2 + \cdots + r_n^2 = \sum r_n^2 \] \hspace{1cm} (23)

and at parallel connection (Fig. 3b)

\[ r_e^2 + \rho_2 c^2 \Omega^2 + \cdots + \rho_n c^2 \Omega_n^2 = \sum \rho_n c^2 \Omega_n^2 \] \hspace{1cm} (24)

Similarly, for the homogenous medium the author develops in the case of a non-homogenous medium, the equivalent complex dielectric constant

\[ \varepsilon_{ce} = \varepsilon_e - j \frac{2\sigma}{\varepsilon} \] \hspace{1cm} (25)
equivalent coefficient of absorption
Absorption, refraction and ... 

\[ n^2 = \frac{1}{2} \left( \sqrt{\epsilon^2 + 4 \epsilon^2 \eta^2} + \epsilon \right) \]  

(26)

\[ n^2 = \frac{1}{2} \left( \sqrt{\epsilon^2 + 4 \epsilon^2 \eta^2} + \epsilon \right) \]  

(27)

equivalent indice of refraction

Similarly to the Eq. (7), (8) and (9)

\[ n^2 = \epsilon^2 + \epsilon \]
\[ \epsilon^2 = \epsilon^2 - \epsilon \]
\[ n_{\epsilon} = \eta_{\epsilon} = \eta_{\epsilon} \]  

(28)

The coefficient of reflection is

\[ \epsilon = \frac{(n^2 - 1)^2 + \epsilon^2}{(n^2 + 1)^2 + \epsilon^2} \]  

(29)

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Absorption, refraction and ...

\[ r_e = r_0 e^{j\psi_e} = \frac{m \sin \psi_e - n_0 e^{j\phi_0}}{m \sin \psi_e + n_0 e^{j\phi_0}} \]

(30)

The use of equivalent coefficients permits the author to use the same equations for homogenous and non-homogenous media. From these, it may be seen that \( d_e, n_e \) and \( r_e \) change not only with the frequency but also with the total distance \( d \) and the equivalent angle of incidence \( \psi_e \), in relation to the distribution of \( \sigma_n \) and \( \varepsilon_n \) at individual \( d_n \) and \( \psi_n \). Observing the most common type of distribution of electric constants \( \sigma \) and \( \varepsilon \) in any type of heterogeneous medium, the distribution of \( \sigma \) and \( \varepsilon \) in a vertical plane (Fig. 4) can be presented with various irregular planes of the same value \( \sigma \) (solid lines) and \( \varepsilon \) (dashed lines). The appearance of the \( \sigma \) and \( \varepsilon \) distribution will be similar if viewed in a horizontal plane. Knowing the distribution and the quantities \( \sigma \) and \( \varepsilon \) in space, while Card 13/16
Absorption, refraction and ... performing calculations, one can consider more precisely those quantities $\sigma$ and $\varepsilon$ which are in the path of electromagnetic waves. It is known that conductivity $\sigma$ and the dielectric constant $\varepsilon$ can change in the course of time under the influence of various factors, such as temperature $T$, moisture $w$, pressure $p$, and electron density $N$. Under the influence of the changes in these factors,
Absorption, refraction and ...

the $\sigma$ and $\varepsilon$ will change and the equivalent $\sigma_e$ and $\varepsilon_e$ will correspond to the equivalent temperature $T_e$, moisture $w_e$, pressure $p_e$, electron density $N_e$, etc. Instead of an unchanged appearance of $\sigma$ and $\varepsilon$ (Fig. 4) there will be a variable picture of their distribution and their value. The variations of the constants will depend on the changes of the above-mentioned factors. Similarly to the transformation of the complex high-tension electric network with distributed constants into a section which contains only two points, a transformation of the heterogeneous medium can also be made into a simple section of the homogenous medium of equivalent electric constants. Equivalent orbiting of air and equivalent electric constants fully determine the corresponding heterogeneous medium at a given frequency. This method permits, in addition to simple and more accurate calculations, also a choice of optimum conditions for individual cases of electromagnetic wave propagation. There are 7 figures and 6 non-Soviet-bloc references. The
Absorption, refraction and ...

reference to English-language publication reads as follows: D. Kerr, Propagation of short radio waves. McGraw-Hill, New York, 1951. [Abstractor's note: This is essentially a complete translation].

SUBMITTED: July 25, 1959
AUTHOR: Argirović, Milenko, Engineer

TITLE: Propagation of ultra-short waves in the troposphere

PERIODICAL: Tehnika, no. 7, 1960, 1247-1253

TEXT: The author puts forward a hypothesis on propagation, based on material conditions of the medium together with the theory of equivalent parameters as factors of propagation, i.e. resting on absorption, refraction, and reflective diffraction. An expression for the power of the receiving signal is obtained, from which the method for measuring the refractive index of the troposphere follows plus explanations of other anomalies, phenomena, etc. In scattering propagations with directional emission from T, and receiving by R (Fig. 1) at distance d (in km) with earth's radius R, or \( R' = \frac{4}{3} R \),

\[
\Theta = \alpha_t + \sigma_r + \beta
\]  

(3)
Propagation of ultra-short ... are valid. For homogeneous gaseous medium,

$$\eta = \frac{d}{148}$$  \hspace{1cm} (4)

$$a = \sqrt{\frac{n}{2} \left( \sqrt{\varepsilon^2 + \frac{3.25 \cdot 10^8 \sigma^2}{n^2}} - \varepsilon \right)}$$  \hspace{1cm} (5)

$$n = \sqrt{\frac{n}{2} \left( \sqrt{\varepsilon^2 + \frac{3.25 \cdot 10^8 \sigma^2}{n^2}} + \varepsilon \right)}$$  \hspace{1cm} (6)

$$|\varepsilon_c| = \sqrt{\varepsilon^2 + \frac{3.25 \cdot 10^8 \sigma^2}{\varepsilon^2}}$$  \hspace{1cm} (7a)
Propagation of ultra-short ...

follow, where: \( \mu \) is magnetic permeability, \( \mathcal{E} \) dielectric constant, \( \sigma \) conductivity, \( f \) is frequency in Ms, \( \alpha \) is the absorption coefficient, \( n \) the refractive index, and \( \mathcal{E}_c \) complex dielectric constant, On the basis of Debye's equation, which links \( n \) with air temperature \( T \) (in °K)

\[
n - 1 = \frac{77.6 \times 10^{-6}}{T} + \frac{4810}{T} p_a e \tag{8}
\]

is obtained, where \( p_a \) is the atmospheric pressure in millibars, \( p_e \) - saturated vapor pressure in millibars, \( e \) - relative humidity. Using a modified refractive index \( N \)

\[
N = (n - 1) 10^6 \tag{9}
\]

which is relatively small, the approximate

\[
-1 = 2N10^{-6} = \frac{155.2 \times 10^{-6}}{T} p_a + \frac{4810}{T} p_e \tag{10}
\]
Propagation of ultra-short ... results. There are further factors such as density, height, suspended droplets and particles which all affect the incoming signal. In the non-homogeneous troposphere, propagation follows other routes. By considering equivalent absorptions for small height changes in the direction of rays

\[ \alpha = 1.4 \times 10^{-3} \sqrt{N} = 1.4 \times 10^{-3} \sqrt{\Delta n} \] (18a)

\[ \Delta n = \left( \frac{\sqrt{N_{e1}} - \sqrt{N_{e2}}}{h} \right)^2 \] (19)

result, \( h \) - height difference, or thickness of reflective layer, \( N_{e1}, N_{e2} \) are values of \( N \) at heights 1 and 2) where \( \Delta n \) is the true gradient of refraction index for unit length. Lines of constant \( \Delta n \) on the H-h graph can be set up as seen in Fig. 5, and these fluctuations in \( \Delta n \), as seen, explain large fluctuations in the short-wave signals sometimes obtained. The propagated
Propagation of ultra-short wave is thus refracted due to its inhomogeneous refractive index in the layer, but also there are diffractions of Bragg's type, i.e. by reflection, given by the Bragg expression, and due to the presence of the suspended particles in tropospheric layer. Energy is also lost due to absorption \( a \),

\[
a = \sqrt{\frac{\alpha}{\theta}}
\]

where \( \theta \) represents Bragg's angle. The damping factor \( A = e^{-a} = P_a/P_t \) - ratio of emitted powers through the medium and vacuum respectively. Reflection coefficient \( r \) is the ratio of the reflected and incident electric fields given by

\[
r = \frac{\sin \frac{\theta}{2} - \sqrt{s_i^2 - 1 + \sin^2 \frac{\theta}{2}}}{\sin \frac{\theta}{2} + \sqrt{s_i^2 - 1 + \sin^2 \frac{\theta}{2}}}
\]
Propagation of ultra-short ... 

and using Equations (18a) (21),

\[ R = r^2 = \left( \frac{1 - \sqrt{1 + 5 \cdot 10^{-2} a^2}}{1 + \sqrt{1 + 5 \cdot 10^{-2} a^2}} \right)^2 \]  

(23a)

results. Finally, the ratio of received and transmitted powers \( P_r, P_t \) is obtained in

\[ \frac{P_r}{P_t} = \frac{5 \cdot 10^{-4} g_t g_r}{r^2 d^2} e^{-a \cdot R} \]  

(24)

Fig. 8 shows dependence of \( e^{-a \cdot R} \) on \( a \), and that of signal on the range. From the graph, the critical value of \( a \) is 2, when critical \( \theta = \left( \frac{\Delta n}{2} \right)^{1/2} \), i.e. angle of crossing of beams for maximal power ratio. Equation (24) shows that if \( e^{-a \cdot R} \) outweighs \( d^2 \). 

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Propagation of ultra-short ...

then signal strength still grows with range which can happen if sudden falls in $\Delta n$ occur due to inversions. In summer strength is higher due to higher $T$ and lower $\Delta n$ and $a$, and the same is valid for the fact that strengths are maximal during 10 to 16.00 hrs. in daytime. During rains, equivalent $\Delta \varepsilon$ rises causing a rise in $\Delta n$ and $a$, so the signal fades; during snowfalls, fading increases as temperature lowering increases $a$. Also the refractive index of the troposphere can be measured from 24; rewriting one obtains

$$\frac{P_r}{P_t} = k \cdot \varphi(a)$$

(27)

$$\varphi(a) = e^{-a \cdot R} = k_1 P_r$$

(28)

where $k_1$ is known, $P_r$ can be measured and so $a$ is found from Fig. $8$, $\theta$ is known from

$$\alpha_1 + \alpha_2 = \theta - \beta$$

(26)
Propagation of ultra-short ...

and to get the a range, one repeats the measurement of P at another θ and a. If Δn = const., at height 2h, a θ = a₁θ₁ = a₂θ₂ etc., and Δn is obtained from Equation (21). Equation (24) has been checked by the recent experimental work and found to compare favorably. There are 10 figures and 23 references: 2 Soviet-bloc and 21 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: J. Feinstein, Gradient reflections from the atmosphere, Trans. IRE, Professional group on antennas and propagation, USA, Dec. 1952, PGAP 4; H.Friis, A. Crawford, D. Hogg, A reflection theory for propagation beyond the horizon, Bell syst. techn. journ. USA, maj 1957, 38, no. 3; A. Crawford, D. Hogg, W. Kummer, Studies in tropospheric propagation beyond the horizon, Bell syst. techn. journ. USA, Sep. 1959, 38, no. 5; H. Booker, W. Grodon, The role of stratospheric scattering in radiocommunication, Proc. IRE, USA, Sep. 1957, 47, no. 9.
Propagation of ultra-short ... Y/001/61/000/007/001/002
ASSOCIATION: Uprava za radiosobraćaj, Beograd (Bureau for
Radio-communications, Belgrade)
SUBMITTED: December 7, 1960

Card 9/12
AUTHOR: Argirovic, Milenko

TITLE: Multi-beam tropospheric wave propagation

PERIODICAL: Referativny zhurnal, Avtomatika i radioelektronika, no. 3, 1962, abstract 3-7-45shch (Telekomunikacije, 1961, v. 10, no. 1, 1-5)

TEXT: Wave propagation over the mountain range peaks is studied. Non-homogeneous troposphere is considered which causes a complex wave type due to absorption, refraction and diffraction. Two beams appear above the range: One of them is tropospheric and the other is diffracted by the mountain ridge, sequentially with the beam reflected from earth. Formulas are derived for diffraction coefficients, for sequentially and parallel diffracted beams. At frequencies below 10 Mc/s both beams are parallel because of meteorological conditions. In practice, the tropospheric beam disappears. Constant phase formulas are derived for both beams. 4 references.

Card 1/1
ARGIROVIC, Milenko, ing.

Influence of the underground conductivity on the curved propagation of telecommunication waves. Telekomunikacije 10, no. 3:1-7, J1 '61.

(EEAI 10:9/10)

(Telecommunication)
The application of radiowave propagation in various branches of the economy

Tehnika, no. 12, 1962, 2325-2330

The author suggests that the methods utilized in radio engineering for the measurement of electrical constants of ground could also be applied in telecommunications, geology and in the building and mining industries. A brief survey is given of mathematical expressions relating the complex permittivity and the conductivity of ground to the absorption of radiowave in the case of homogeneous as well as heterogeneous ground. These constants are determined not only by the composition of ground, but also by moisture, temperature and frequency. Methods of measurement of conductivity and permittivity are systematized: measurement of samples in laboratories; the four-sonde method for the measurement of conductivity; measurement of the inclination of the electric field of verti-
The application of radio wave ...  

...cal polarized wave; measurement of the attenuation of the ground wave; measurement of the attenuation of the electromagnetic field below ground surface; measurement of the phase shift of ground wave and measurement of the coefficient of reflection. Various factors influencing the conductivity of ground are discussed referring to the maps of ground conductivity in Yugoslavia, made for seven frequency-bands covering the range from 600 to 1500 kc/s. The advantages are emphasized of these maps not only in solving problems of radio broadcasting, radio communication and radiogoniometry but also in geology for the determination of mineral layers, in hydrology (research of underground waters), in telecommunications and power distribution (study of grounding, lightning protection, short-circuit currents, transmission line impedance, coupling of power and transmission lines etc). There is 1 table.

ASSOCIATION:  
Tehnička komisija Jugoslovenske radio-televizije,  
Beograd (Technical Commission of the Yugoslav Radio-Television, Belgrade)

SUBMITTED:  
May 17, 1962

Gard 2/2
ARGIROVIC, Milenko, inž. (Beograd, Bircaninova 18)

Influence of ionospheric electric constants on various ways of propagation. Elektrotehnička Hrv 5 no.4:121-132 '62.

I. Savetnik Jugoslovenske radio-televizije, clan Redakcionog odbora, "Telekomunikacije".

1. Savetnik Jugoslovene radio-televizije, olan Redakcionog odbora, "Telekomunikacije".
ARGIROVIC, Milenko, inz. (Beograd, Bircaninova 18)


1. Sekretar Tehnicka komisije Jugoslovenske radio-televizije, Beograd.
ARGIROVIC, Milenko, ins. (Beograd, Siraninova 18)

Use of radio wave propagation in economic research. Tekhnika Jug
17 no.12;2325-2330 D '62.

1. Sekretar Tehnicke komisije Jugoslovenske radio-televizije,
Beograd.
ARGIROVIC, Milenko, inž. (Beograd, Bircaninova 18)

Influence of tropospheric characteristics on the radar equation.

1. Sekretar Tehnicke komisije Jugoslovenske radio-televizije,
Beograd.
ARGIROVIC, Milenko, ins.

Certain cases of nonreciprocity of radio waves. Telekomunikacije 12 no.2:1-4 Mr '63.

J. Savetnik Jugoslovenske radio-televizije i clan Redakcijne odbora, "Telekomunikacije"
ARGIROVIC, Milenko, inż.

Factors influencing propagation over artificial earth satellites.
Telekomunikaciјe 12 no.1:12-18 Ja '63.

I. Savetnik Jugoslovenske radio-televizije, clan Redakcionog
odbora, "Telekomunikacije."
ARGIROVIC, Milenko, ins. (Beograd, Birosmilova 16)

Formalism in expressing various aspects of energy. Tehnika Jug 19 no.5:813-817 My '64.
Hypotheses on the simplification of certain cases of gain due to obstacles. Telekomunikacije 12 no.3:1-7  
Je '63

1. Sekretar Tehnicke komisije Jugoslovenske radio-televizije, clan Redakcionog odbora, "Telekomunikacije".
ARGIROVIC, Milenko, inž. (Beograd, Bircaninova 18)

Basic principles in computing radio wave propagation,
Tehnika Jug 18 no. 8: Supplement: Elektrotehnika
12 no. 8: 1520–1523 Ag '63.

1. Sekretar Tehnicke komisije Jugoslovenske radio-
televizije, Beograd.
ARGIROVIC, Milenko, inz.

Ionospheric medium of propagation, and simplified expressions for computing its parameters. Telekomunikacije 13 no.1/2:1-7 Ja-Ap '64.

1. Secretary, Technical Commission of the Yugoslav Radio and Television System.
ARMIROVIC, Milenko, dipl. inz. (Beograd, Bircaninova 18)

Universality of space symbolism and the triplet principle. Tehnika Jug 19 no.6:998-1002 Je '64.
EFROS, L.S.; POLYAKOVA, R.P.; ARGITTI, M.G.

Derivatives of piazthiole and piazselenele. Part 7:
Monohydroxy derivatives. Zhur. ob. khim. 32 no.2:516-521
F '62. (MIRA 15:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
   (Benzothiadiazole)
   (Benzoselenadiazole)
ARGO, Yu.A.

Principal stability and deformation properties of asbestos cement during cross bending and monaxial tension and compression. Trudy NIIAsbesttsamenta no.1656-69 '63. (Asbestos cement--Testing) (Strains and stresses)
ARGO, Yu.A., imzh.

Deformation and stability properties of asbestos cement subject to axial tension and lateral bending. Trudy NIIAsbestsmenta no.14: 71-79 '62. (MIRA 16:9)
ARGOSKIN, A. A.

At the plenary meeting of the conference of the Power Establishments of the Academies of Sciences of the Union Republics and of the Affiliates of the Academy of Science, USSR, the following paper was presented by Doctor of Technical Sciences A. A. Agroskin on "High-temperature working of fuels".

SO: Elektrichestvo, No. 9 Moscow, Sept. 1947 (U-5534)
SPIVAK, M.Ya.; ARGUDAYEVA, N.A.; NABIYEV, E.G.; CHISTOVICH, G.N.;
RIVLIN, M.I.; SEMENOV, M.Ya.; KRUGLIKOV, V.M.; SHAL'NEVA, A.M.;
TITROVA, A.I.; RAYKIS, B.N.; MELYAEVA, Ye.N.; BRUDNAYA, E.I.;
VYSOTSKII, B.V.; MALYKH, F.S.; MIROTMOVSEV, Yu.I.; SYCHEVSKII,
P.T.; GOPACHENKO, I.M.; KARPITSKAYA, V.M.; PETISOVA, I.A.;
MARTNYUK, Yu.V.; BMDINA, I.A.

Annotations, Zhur. mikrobiol., epid. i immun. 40 no.3:128-131
Mr '63.

(MIRA 17:2)

1. Iz Kemerovskogo meditsinskogo instituta i Kemerovskoy
klinicheskoj bol'nitsy No.3 (for Spivak, Argudayeva). 2. Iz
Kazanskogo instituta usovershenstvovaniya vrahov imeni
Lenina (for Nabiye). 3. Iz Leningradskogo kozhnoj dispensera
No. 1 (for Chistovich, Rivlin). 4. Iz Rostovskoy oblastnoy
sanitarno-epidemiologicheskoy stanitsi (for Semenov). 5. Iz
Stavropol'skogo instituta vaktsin i svyrotok (for Kruglikov,
Shal'neva, Titrova, Raykis). 6. Iz Kuybyshevskogo instituta
epidemiologii, mikrobiologii i gigiyeny i Tsentral'noho institu-
tuta usovershenstvovaniya vrahov (for Milyaeva). 7. Iz
Vsesuyznoho nauchno-issledovatel'skogo instituta sel'skogo
khlebnogo gigiyeny i sanitarnogo upravleniya Ministerstva putey
soobshcheniya i Detskoy polikliniki st. Lyublino

(Continued-on-next-card)
Antimicrobial properties of phytoncidin, a medicinal garlic preparation. Antibiotiki 8 no.9:832-833 S '63.

ARGUN, B. G.

Out-of-town conference on plant protection. Zashch. rast. ot vred. i bol. 5 no.10:62 0 '60. (MIRA 16:1)

1. Glavnyy agronom po sel'khoznauke Ministerstva sel'skogo khozyaystva Abkhazskoy ASSR.

(Georgia—Plants, Protection of—Congresses)
ARGUN, M.M., otv., za vypusk; GORDEZIANI, S.A., tehred.

[Statute of standing committees of district, city, village, and settlement soviets of workers' deputies of the Abkhazian A.S.S.R.]

1. Abkhazian A.S.S.R. Laws, statutes, etc.
   (Abkhazia--Soviets)
AUTHORS: Chërnyy, G.V., Garazhchenko, I.O., and Argunov, A.A.

TITLE: The "USL-1" Device for the Welding of Mine-Car Bodies (Ustanovka "USL-1" dlya svarki kamov vagonetok)

PERIODICAL: Svarochnoye Proizvodstvo, 1958, Nr 4, pp 13-14 (USSR)

ABSTRACT: The article contains a detailed description, illustrated by schematic drawings, and a photograph of a new device, type "USL-1", for the assembly and automatic welding of mine-car side sheets. The device was designed at the Toretskiy mashinostroitel'nyy zavod (The Torets Machine-Building Plant) and can process 80 to 100 sheets with 200 m of total seam per shift. There are 2 figures and 1 photograph.

ASSOCIATION: Toretskiy mashinostroitel'nyy zavod (Torets Machine-Building Plant)

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Card 1/1
In this paper, the author finds the special case of the ternary operation $x y z = (x + y) z$ and $x m = x - m 0$. In the paper, the author finds the algebraic equivalents in terms of the ternary operation. The algebraic equivalents for various configuration theorems. For a given configuration, a theorem that is projectively equivalent to the theorem of Desargues. A large number of relations between configuration theorems is found, and a diagram at the end of...
ARGUNOV, Boris Ivanovich; BALK, Mark Benevich; SIDEROVA, L.A., redaktor;
KIPOTNIK, V.S., redaktor; RYBIN, I.V., tekhnicheskiy redaktor


(Geometry, Plane)
ARGUNOV, Boris Ivanovich; SKORNYAKOV, Lev Anatol'evich; LAPEKO, A.F., red.; AKHLAOV, S.M., tekhn. red.


(Constructions)
ARGUNOV, Boris Ivanovich; BALK, Mark Benevich; OSTLANO, N.M., redaktor;
SMIRNOV, G.I., tehнический redaktor


(Geometry, Plane)
ARGUNOV, B.I.

Geometrical constructions by the use of rulers and compasses
of limited size. Uch. zap. Smol. gos. ped. inst. No.10;9-11
'62.

(MIRA 17:1)
ARGUNOV, B. N.


Dissertations presented for degrees in science and engineering in Moscow in 1947

S0: Sum No. 457, 18 Apr 55


(Yakutia—Economic conditions) (Yakutia—Culture)
ARGUNOV, I.I.

VAYSKHAN, Lazar' Solomonovich, kapitan 1 ranga; ARGUNOV, I.I., kapitan 1-go ranga; STREL'NIKOVA, M.A., tekhnicheskiy redaktor

Mounting stresses in cylinder heads. Trakt. i sel'khozmash, no.5:6-8 My '64. (MIRA 1716)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro po dvigatelyam.

Tightening of important threaded joints of an engine. Mashino-
stroenie no.3:88-91 My-Je '64.

(MIRA 17:11)
ARGUNOV, M.

Visiting our Bulgarian friends. Metallurg 10 no.10:38-39 0 '65.

(MIRA 18:10)

1. Zamestitel' glavnogo inzhenera Kuznetskogo metallurgicheskogo kombinata.
ARGUNOV, M.I.

BARDIN, I.P.; BORISOV, A.P.; BERLAN, R.V.; BERMOLEYEV, G.I.; VAYSBERG, L.S.;
ZHEREBIN, B.N.; BORODULIN, A.I.; SHAROV, G.V.; DOMNITSKIY, I.F.; CHUSOV, F.P.
SOROKO, L.N.; KLIIMASENKO, L.S.; PAVLOWSKIY, S.I.; ZIL'HERSHTAIN, M.B.;
LIVULENKO, I.S.; NIKULINSKIY, I.D.; BRAGINSKIY, I.A.; SALOV, Ye.M.;
TROSHIN, N.F.; PESRIKHEYEV, V.I.; ARGUNOV, N.I.; DUL'NEV, F.S.; BIDULYA, L.N.
GAYNANOV, S.A.; FROLOV, N.P.; VINOCHENKO, V.S.; KOGAN, Ye.A.

G.E. Kazarnovskii; obituary. Stal' 15 no.8:757 Ag'55. (MLRA 8:11)
(Kazarnovskii, Grigori Efimovich, 1887-1955)
ARGUNOV, N.S.; GAVRIKOV, S.I.

Bologan-Tas, the early Quaternary volcano. Izv. AN SSSR, Ser. geol. 25 no.8:90-93 Ag '60.

1. Verkhne-Indigirskoye geologorazvedochnoye upravleniye, pos. Ust'-Nera, Yakutskoy ASSR.
   (Bologan-Tas Volcano)
The first woman in space. Kryl.rod. 14 no.7:8-10 Jl '63.
(MIRA 16:9)
(Tereshkova, Valentina Vladimirovna)
MIKOYAN, A., general-major aviatsii, voenny leuchik pervogo klassa; 
VAZHIN, F., polkovnik; ARGUNOV, O., podpolkovnik

In Major Zakharov's group. Av. 1 kom. 46 no. 437-49
Ap '64. (MIRA 17:3)
"Portable Standard Signal Generator," P. Argunov

"Radio" No 6, pp 50-53

Describes construction, circuit (schematic diagram) and parts of improved model of prize-winning signal generator at the 7th All-Union Corr Radio Exhibition (dimensions 10 x 16 x 26 cm, weight 3 kg). Intended to aid radio amateurs to tune in and service radio apparatus and measure their parameters.
ARGUNOV, P. P.


Source: MLRA
ARGUNOV, P.P.

Improvement in the laboratory technique for the determination of the percolation coefficient of clayey soils. Trudy NII osn. i fund. no.11: 63-73 '48. (MLA 7:11)

(Soil percolation)
Artificial raising of ground water levels in loess-like soil layers by infusing water into drilled wells. Trudy NII osn. 1 fund. no,11:74-85 '48. (MLRA 7:11) (Water, Underground)
ARGUNOV, Pavel Pavlovich, prof.; doktor tekhn.nauk; KHITARYAN, A.M.,
spets.red.; KIZICHENKO, I.Ye., red.; ROZHAVINA, A.L., red.;
TUNOVSKY, Ye.E., tekhn.red.

[Hydroelectric power stations; principles of the utilization
of water power] Gidroelektrostantsii; osnovy ispol'zovaniia
vodnoi energii. Kiev, Gos.isd-vo lit-ry po stroit. i arkhit.

(Hydroelectric power stations)
Turbine block with ejection from a conical suction pipe with an internal cone insert. Izv. vys. ucheb. zav.; energ. 3 no.11:100-104 N '60.


(Hydroelectric power stations)
TITLE: Catedioptic telescope with mirror-lens correction


ABSTRACT: Combinations of mirror and lens optical elements in telescope design should result, in principle, in an instrument with greater speed and better chromatic aberration correction than is the case with refractors and reflectors. As an example, the basic drawing of such an instrument follows. Variations in the form of the curved elements can be made to cover the full range of possible combinations of mirror and lens elements. The present author has designed an instrument, shown in the diagram, which is free of the above-mentioned deficiencies. The essential feature is the location of the correcting element in the converging portion of the beam. A similar configuration...
system was proposed earlier by G. G. Slyusarev (A. I. Tudorovsky, Teoriya
opticheskikh pribov, v. 2, Ioskhizdat, 1952, p. 361), but its construction
was much more complicated. Detailed design calculations of the new device will be
published in a separate paper. Here, the author presents a detailed description
of the construction and operation of the first such instrument with a mirror 225 mm
in diameter. The author notes in conclusion that a second such instrument with a
425-mm mirror has been constructed by Prof. E. A. Lebedev at the Novgy Branch
of the Odessa Astronomical Observatory. Odessa Astronomical Observatory.
Orig. art. has: 5 figures.

ASSOCIATION: Odesskoye otdeleniye VAGO (Odessa Section, VAGO)

SUBMITTED: 00 ENCL: 01 SUB CODE: OP, AA

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Card 2/3
Fig. 1. The principle of the new optical telescope.

1 - Main spherical mirror; 2 - unglued lens; 3 - lens with mirror on its back surface; 4 - eyepiece.