OGIYEVICH, I.B.

ZHELUDEV, I.S.; OGIYEVICH, I.B.

Piezoelectric instrument for measuring pressures and stresses in periodically operating mechanisms. Trudy Inst.Krist.no.12:200-204 '56. (MLRA 10:2)

1. Institut kristallografii Akademii nauk SSSR.
(Oscillators, Crystal)

LAPIR, F.A.; SUSNIKOV, A.A.; SHAGINOV, D.L., dots.; OGIYEVICH, A.I., kand.tekhn.nauk,retsenzent; IONOV,P.M.,inzh.,red.; SMIRNOVA,G.V., tekhn.red.

[Mechanical equipment of plants manufacturing precast reinforced concrete elements; atlas of technical drawings]Mekhanicheskoe oborudovanie zavodov sbornykh zhelezobetonnykh izdelii; atlas konstruktsii. Pod red. D.L.Shaginova. Moskva, Mashgiz, 1962. 128 p. (MIRA 15:12)

(Concrete plants--Equipment and supplies)

L 09215-67 EWT(m)
ACC NR: AP7002776 SOURCE CODE: UR/0020/66/166/004/0839/0842

30

AUTHOR: Ogiyevetskiy, V. I.; Polubarinov, I. V.

ORG: Joint Institute for Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Theory of a neutral massive tensor field with spin 2

SOURCE: AN SSSR. Doklady, v. 166, no. 4, 1966, 839-842

19

TOPIC TAGS: nuclear physics, nuclear spin

ABSTRACT: An interacting symmetrical tensor field $h^{\gamma\prime}$ ($h^{\gamma\prime} = h^{\prime\gamma}$) may define spins 2 and 1 and two spins 0. A theory of such interacting mass tensor field was developed, deriving a supplementary Hilbert-Lorentz type generalized condition from the equation of motion. In this theory, the $h^{\prime\gamma}$ field may define only spins 2 and 0, excluding the other 0 spin and the spin 1 because the sign of the spin 1 energy is opposite of that of spins 2 and 0. The interaction of the tensor field with itself and with the scalar field was examined; a two-parameter family of nonequivalent theories was obtained for the mass tensor field. The equation obtained differed from Einstein's equation by possessing a cosmological term which disturbs the general covariance and the theory of equivalence. This paper was presented by academician N. N. Bogolyubov on 15 May 1965. The authors thank B. N. Valuyev, M. A. Markov and Ya. A. Smorodinskiy for useful discussions. Orig. art. has: 22 formulas. [NA]

SUB CODE: 20 / SUBM DATE: 10May65 / ORIG REF: 003

Card 1/1 mla

UDC: 530.12+530.145

0925 1656

OGIYEVETSKIY, V.I.; POLUBARINOV, I.V.

Einstein's equations as describing a massless tensor field with spin 2. Dokl. AN SSSR 166 no.3:584-587 Ja '66.
(MIRA 19:1)

1. Ob"yedinennyy institut yadernykh issledovaniy. Submitted May 25, 1965.

L 00570-66

ACCESSION NR: AP5016557

SUBMITTED: 03Dec64 ENCL: 00 SUB CODE: GP, MA

NR REF SOV: 004 OTHER: 025

Card 3/3

infinite series in terms of the gravitational coupling constant. The interaction obtained in this manner makes it possible in principle to calculate gravitational effects involving fermions to any arbitrary order in the gravitational coupling constant. The research was motivated by the fact that the weak-field approximation is insufficient even for such simple effects as the gravitational self-energy of the electron or the Compton effect of a graviton on a fermion, and it is necessary to take into account interaction terms of the second order in the gravitational coupling constant. The authors discuss the group property of generally covariant transformations, the laws of transformation of the spinor, the covariant derivative of a spinor, the properties of bilinear combinations, and the interactions of a spinor field. Interactions of a spinor field with gravitational, electromagnetic, and other fields are constructed in accordance with the derived transformation law. "The authors thank M. A. Markov for a discussion." Orig. art. has: 54 formulas.

44.55

L 00570-66 EWP(m)/EWT(1)/T IJP(c)

ACCESSION NR: AP5016557 UR/0056/65/048/006/1625/1636

AUTHORS: Ogiyevetskiy, V. I.; Polubarinov, I. V.

TITLE: Spinors in gravitation theory

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 6, 1965, 1625-1636

TOPIC TAGS: spinor, gravitation, fermion, graviton

ABSTRACT: Inasmuch as gravitational interactions of fermions have not yet been discussed within the framework of the perturbation-theory expansion in the gravitational constant, the authors employ a group-theoretical approach and introduce spinors as objects which transform in accordance with a representation of that group according to which the fundamental tensors are transformed. The gravitational interaction of fermions is thus expressed explicitly in terms of the gravitational field and can be represented in the form of an

Card 1/3

OGIYEVETSKIY, V.I.

Disturbed symmetries at high energies. Zhur. eksp. i teor. fiz. 47 no.3:966-969 S '64. (MIRA 17:11)

1. Ob"yedinennyy institut yadernykh issledovaniy.

ACCESSION NR: AP4042574

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 13Dec63 DATE ACQ: ENCL: 00

SUB CODE: GP NR REF SOV: 008 OTHER: 011

Card 3/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800015-6

ACCESSION NR: AP4042574

theories. In the theories which the authors have defined as class B, and for which a complete listing is not possible, the propagators cannot be chosen in transverse form, since this leads to violation of unitarity or causality. This includes local theories of massive charged vector fields. In theories of class A with zero mass of vector fields, unity spin is ensured by gauge invariance, so that it is possible to add arbitrary gradient additions to the propagator. In particular, the propagator can be chosen transverse. If the mass of the vector fields in class A theories differs from zero, then the choice of the propagator in the transverse form for all the components of the vector field is simultaneously inadmissible, since it leads in the local theories to violation of either causality or unitarity. No attempt was made to go outside the framework of perturbation theory. "The authors are grateful to B. N. Valuyev and D. V. Shirkov for stimulating discussions." Orig. art. has: 1 figure and 24 formulas.

Card 2/3

ACCESSION NR: AP4042574 S/0056/64/046/006/2102/2107

AUTHORS: Ogiyevetskiy, V. I.; Polubarinov, I. V. BR

TITLE: On the choice of vector field propagators

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 6, 1964, 2102-2107

TOPIC TAGS: perturbation theory, causality, quantum electrodynamics, vector space, Green function

ABSTRACT: In order to ascertain in which local theories one can choose the propagators of vector fields in transverse form, the authors demonstrate that the propagators can be chosen in transverse forms only in theories in which the longitudinal part of the propagators is simply inessential (electrodynamics, Yang-Mills theory for massless vector fields, or the theory of a massive mutual vector field). Such theories were previously described by the authors (ZhETF v. 45, 166 and 709, 1963), where they were called class A

Card 1/3

OGIYEVETSKIY, V.I., POLUBARINOV, I.V.

Selection of vector field propagators. Zhur.eksper.i teor.fiz. 46 no.6:2102-2107 Je '64.

1. Ob"yedinennyy Institut yadernykh issledovaniy. (MIRA 17:10)

ACCESSION NR: AP4025937

bitrary system of fields of spin zero, 1/2, and 1 under the new assumptions. Some new general groups or phase transformations are indicated, under which all the theories are invariant as a result of their belonging to class-A. The interactions with fields with spin 1/2 and zero and their symmetry properties are examined. The Lagrangians of the free fields are shown to be likewise invariant relative to these transformations, under suitable choice of the masses. It is pointed out that calculations of terms with non-conservation of spinor particles can lead in general to non-conservation of parity in the interaction of spinor fields having nonzero mass with vector fields. "In conclusion we are grateful to B. N. Valuyev and L. B. Okun' for critical remarks and to M. A. Markov for interest in the work. Orig. art. has: 42 formulas.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 19Aug63 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: PH NR REF SOV: 003 OTHER: 001

Card 2/2

ACCESSION NR: AP4025937 S/0056/64/046/003/1048/1055

AUTHORS: Ogiyevetskiy, V. I.; Polubarinov, I. V.

TITLE: Minimal interactions of fields with spins 0, 1/2, and 1

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 46, no. 3, 1964, 1048-1055

TOPIC TAGS: field interaction, minimal interaction, class A interaction, spinor particle number interaction, coupling constant, free field Lagrangian, Lagrangian invariance, parity nonconservation, nonzero mass spinor field, vector field

ABSTRACT: The results of an earlier investigation (ZhETF v. 45, 966, 1963) are generalized to the case when conservation of the number of spinor particles is not assumed, but the coupling constants remain dimensionless. The most general Lagrangian describing the interactions (defined in the earlier paper as class-A) is derived for an ar-

Card 1/2

OGIYEVETSKIY, V.I.; POLUBARINOV, I.V.

Interacting fields with spin 1 and symmetry properties. Zhur. eksp. i teor. fiz. 45 no.4:966-977 O '63. (MIRA 16:11)

1. Ob"yedinennyy institut yadernykh issledovaniy.

OGIYEVETSKIY, V.I.; POLUBARINOV, I.V.

Theory of a neutral vector field with spin 1. Zhur. eksp. i teor. fiz. 45 no.3:709-712 S '63. (MIRA 16:10)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Spinor analysis) (Quantum electrodynamics)

L 16939-63

ACCESSION NR: AP3005274

4

spin 3/2. Other examples are also given. It is pointed out that interactions known not to belong to Class A also exist. "In conclusion we thank N. A. Larkov, B. N. Valuyev, and Ya. I. Granovskiy for discussions." Orig. art. has 29 formulas and 2 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 23Jan63 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 008 OTHER: 016

Card: 2/4

L 16930-63 EWT(l)/BDS AFFTC/ASD

ACCESSION NR: AP3005214 S/0056/63/045/002/0237/0245

AUTHOR: Ogiyevetskiy, V. I.; Polubarinov, I. V.

TITLE: Interacting fields with definite spins

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 237-245

TOPIC TAGS: interacting field, quantum electrodynamics, particle interaction, spin

ABSTRACT: Developing further their earlier work (Zhetf v. 41, 247, 1961; Nuovo Cim. v. 23, 173, 1962; Proc. 1962 Intern. Conf. on High-Energy Phys. at CERN, 1962, p. 606), where the discussion was confined only to quanta with spin-1, the authors discuss the concept of the spin of an interacting field and of particles with higher spins, breaking up the theory into two classes: A - theories in which interacting field, as well as free fields, has only one definite spin, and B - theories in which no definite spin can be ascribed to the interacting fields. Conditions are formulated for the existence of Class A interactions and it is shown that Class A includes all the equations of Gelfand and Yaglom ZhETF v. 18, 703, 1948), the Proca equation for spin 1, and the Rarita-Schwinger equation for

Card 1/2

[Interacting spin 1 fields and symmetry properties] ... eistvuiushchie polia so spinom 1 i svoistva simmetrii. Dubna, Ob"edinennyi in-t iadernykh issledovanii, 1963. 30 p.
(MIRA 16:6)

(Nuclear spin)

S/056/62/043/004/033/061
B108/B102

Quantum electrodynamics in terms...

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: April 11, 1962

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800015-6

S/056/62/043/004/033/061
B108/B102

AUTHORS: Ogiyevetskiy, V. I., Polubarinov, I. V.

TITLE: Quantum electrodynamics in terms of the electromagnetic field intensities

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 4(10), 1962, 1365-1370

TEXT: On the basis of previous work (Nuovo Cim., 23, 173, 1962) the authors present a Lorentz-invariant formulation of quantum electrodynamics in terms of the electromagnetic field strengths. The calculations are based on a non-local field-photon interaction. The S-matrix for the interaction Lagrangian is constructed according to the method of D. A. Krizhnits (ZhETF, 41, 551, 1961). The matrix element for a process with n photons is found to be

$$\langle f|S|i\rangle \sim \bar{u}\ldots\gamma_{\mu_1}\ldots\gamma_{\mu_n}\ldots u F_{\mu_1 4}(\vec{q}_1 s_1) F_{\mu_2 4}(\vec{q}_2 s_2)\ldots F_{\mu_n 4}(\vec{q}_n s_n).$$

Equivalent forms may be obtained when the field strength tensor $F_{\mu\nu}(x)$ is replaced by $\tilde{F}_{\mu\nu}$ or $F_{\mu\nu} \pm \tilde{F}_{\mu\nu}$.

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S/056/62/043/004/032/061
B108/B102

24,6610

AUTHORS: Ogiyevetskiy, V. I., Podgoretskiy, M. I.

TITLE: Some interference phenomena in $K^0\bar{K}^0$ systems

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 4(10), 1962, 1362-1364

JB

TEXT: Continuing earlier work (ZhETF, 43, 720, 1962) the authors studied the nature of beats of the Pais-Piccioni type in the decay of $K^0\bar{K}^0$ pairs. Such beats arise when states with even and odd orbital angular momenta interfere with each other. They depend essentially on the phase difference of the states of the K and $\bar{K}$ mesons. This phase difference can be found from the probabilities of both particles being found in a certain state if magnitude and sign of Δm of the particles is known.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: April 11, 1962

Card 1/1

S/056/62/043/002/048/053
B108/B102

AUTHORS: Ogiyevetskiy, V. I., Okonov, E. O., Podgoretskiy, M. I.

TITLE: Properties of K-meson pairs

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 2(8), 1962, 720-723

TEXT: Some properties of the production and decay of K-meson pairs are considered. It is pointed out that the type of decay is determined by the parity of the orbital angular momentum in the system $K^{o}\bar{K}^{o}$.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: March 31, 1962

Card 1/1

(1)

OGIYEVETSKIY, V. I. and POLUBARINOV, I. V.

"Gauge Invariance and Vector Fields"

report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

Laboratory of Theoretical Physics, Dubna, 1962

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800015-6

OGIYEVETSKIY, V.I.; OKONOV, E.O.; PODGORETSKIY, M.I.; SARANTSEVA, V.R., tekhn. red.

[Some properties of pairs of K^0K^0-mesons] O nekotorykh svoistvakh par K^0K^0-mezonov. Dubna, Ob"edinennyi in-t iadernykh issledovanii, 1962. 13 p. (MIRA 15:6)

(Mesons)

OGIYEVETSKIY, V.I.; POLUBARINOV, I.V.; SARANTSEVA, V.R.[translator]

Quantum electodynamics in terms of electromagnetic field strengths. Dubna, O"edinennyi in-t iadernykh issledovaniy, 1962. 8 p.

(No subject heading)

OGIYEVETSKIY, V.I.; POLUBARINOV, I.V.

Gauge invariant formulation of neutral vector field theory. Zhur. eksp.i teor.fiz. 41 no.1:247-255 Jl '61. (MIRA 14:7)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Vector analysis) (Quantum theory)

OGIYEVETSKIY, V.I.; POLUBARINOV, I.V.

Gauge transformations of Green's functions. Zhur.eksp.i teor.fiz. 40 no.3:926-932 Mr '61. (MIRA 14:8)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Potential, Theory of) (Transformations (Mathematics))

OGIYEVETSKIY, V.I.; POLUBARINOV, I.V.

On meaning of gauge invariance. Dubna, Izdatel'skii otdel Ob"edinennogo instituta iadernykh issledovaniy, 1961. 9 p.
(No subject heading)

GRISHIN, V.G.; OGIYEVETSKIY, V.I.

Evaluating the smallest radius of a two-particle interaction at high energies. Zhur.eksp.i teor.fiz. 38 no.3:1008-1009 Mr '60. (MIRA 13:7)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Particles(Nuclear physics))

On the Electromagnetic Mass of the K-Meson SOV/56-37-3-48/62

The formula

$m_{K^0} - m_{K^+} = (m/8\pi^2)e^2(\frac{7}{3}\lambda^2 - 1) = (m/2\pi)\alpha(\frac{7}{3}\lambda^2 - 1)$ is derived, where the interaction Lagrangian $L = -j_\mu(x)A_\mu(x)$ was used. $j_\mu(x)$ is the operator of the total current of all interacting particles. The form factors are assumed to be $F_{K^+}(q^2) = 16m^4/(q^2+4m^2)^2$ and $F_{K^0}(q^2) = -4\lambda q^2 m^2/(q^2+4m^2)^2$. The mass difference was determined experimentally at $\sim$4.8 Mev. For this energy, in the here derived formula, $\lambda \approx 2$. Thus it is found that, for the purpose of explaining the mass difference, it is not necessary to abandon the assumption that K^+ and K^0 form a charge doublet. There are 5 references.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: May 28, 1959

Card 2/2

21 (1)

AUTHORS: Chou Kuang-chao, Ogiyevetskiy, V. I. SOV/56-37-3-48/62

TITLE: On the Electromagnetic Mass of the K-Meson

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 3(9), pp 866 - 867 (USSR)

ABSTRACT: In the introduction the results of some Western papers are referred to in the present "Letter to the Editor", according to which the K^0-meson is supposed to be heavier than the K^+-meson. The sign of this mass difference seems to contradict the opinion that the neutral and the positive K-meson are spin-less particles belonging to one charge doublet. If the K-particle were not in interaction with the electromagnetic field and if the mass difference were of an electromagnetic nature, the charged particle would have to be heavier because of its own electromagnetic mass. Thus, it is assumed by Rosenfeld, Crawford et al., according to Pais, that K^+ and K^0 do not form a charge doublet and may have different internal parity. The authors of the present paper, however, show that the sign as well as the magnitude of the mass difference $m_{K^0} - m_{K^+}$ may be explained as being caused by electromagnetic interaction.

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their gratitude to Professor M. A. Markov for the constant interest shown in this work and L.G. Zastavenko for valuable discussion. There are 1 table and 15 references.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: February 27, 1959

tigation of the representations of the conformal group C_4 for a zero rest mass. The actual conformal mappings form a product of an inversion in the unit-hypersphere $x'_\mu = x_\mu/x^2$, of a translation and of another inversion. In a table the transformation laws for the solutions of the Klein-Gordon equation and of the Dirac equation with zero rest mass are given: $\Box^2 \varphi_0(x) = 0$, $\gamma_\mu \frac{\partial}{\partial x_\mu} \psi_0(x) = 0$. Even the solution of the Klein-Gordon equation is no scalar with respect to real conformal transformations and to compressional transformations. In the sequel structural relationships for the operators of the conformal group and their representations are given. The infinitesimal operators are given for both the solutions of the Klein-Gordon equation and for the Dirac equation for $m = 0$. In the third section the interrelation between the wave equations for $m \neq 0$ and $m = 0$ are discussed. In the last section the infinitesimal operators of the 15-parametric group for the Klein-Gordon- and Dirac equations with $m \neq 0$ are derived. The finite transformations of the 15-parametric group G_{15} for $m \neq 0$ are very long. As, however, they are completely defined by their infinitesimal properties, the author gives only the latter. The authors express

SOV/56-37-2-21/56

24(5)

AUTHORS: Ogiyevetskiy, V. I., Polubarinov, I. V.

TITLE: On Wave Equations With Zero and Non-zero Rest Mass

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 2(8), pp 470-476 (USSR)

ABSTRACT: In this paper it is shown that the wave equations with non-zero rest mass (including the Klein-Gordon equation and the Dirac equation) are invariant with respect to the 15-parametric transformation group G_{15} (which is a representation of the conformal group C_4). For the Dirac equation there exists also the analogon of the Pauli group. The operators of these transformations all contain the mass m as a parameter. If in the limit m = 0, they transform into the known operators. In the group G_{15} some operators representing the Lorentz-group must be given a form differing from the usual one. This, however, leads into difficulties. The momentum of the particle under a Lorentz rotation does not transform as a four-vector. When deriving the transformations for non-zero rest mass the well-known form of the transformations for m = 0 will, to a large extent, also be used. In this connection the first section of this article is concerned with an inves-

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$\pi^- + p \rightarrow K^- + K^0 + p$. This pair production can be represented by a graph: π^- is voncerted into K^- and K^0 after a virtual π^--p-scattering. In any case, there is a reference system in which the angular distribution of the K-mesons is isotropic. This isotropy is, however, only an approximate one since the interaction in the final state is not taken into account and the $[K\pi]$ -interaction only in the first approximation. The author thanks **Chou Kuang-chao** for useful discussions. There are 1 figure and 6 references, 1 of which is Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy
(United Institute of Nuclear Research)

SUBMITTED: November 20, 1958

21(7) SOV/56-36-2-58/63

AUTHOR: Ogiyevetskiy, V. I.

TITLE: On the Interaction Between K- and π-Mesons (O vzaimodeystvii mezhdu K- i π-mezonami)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 2, pp 642-643 (USSR)

ABSTRACT: In a recently published paper by A. Pais (Pays) the following interesting hypothesis is discussed: The internal parities of charged and neutral K-mesons differ from each other. In this case, severe limitations of the Lagrangians of strong interactions follow from the condition of charge invariance in the pion-nucleon system. Many reactions, for instance $K^+ + n \to K^0 + p$, are forbidden. In order to avoid this difficulty, the $[K\pi]$-interaction $[K\pi] = f(2m_K)[\bar{K} + K^0\pi^+ + \bar{K}^0K^+\pi^-]$ is introduced where m_K denotes the mass of the K-meson. Parity is conserved in this interaction, but the symmetry of strong interactions is no longer valid. For the verification of the $[K\pi]$ interaction, the authors suggest carrying out an experiment concerning the pair production of K-mesons

Card 1/2

for his useful discussions. There are 5 references, 1 of which is Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (United Institute of Nuclear Research)

SUBMITTED: July 15, 1958

this representation, the free field ψ has the Lagrangian $L = \bar{\psi}(1 \times \gamma_\mu \partial_\mu + i\tau_2 \times \gamma_5 m)\psi$ where $\bar{\psi} = \psi^* T_1 \times \gamma_4$. The field equations have the form $1 \times \gamma_\mu \partial_\mu + = -i\tau_2 \times \gamma_5 m\psi$. The authors then introduce new four-component spinors, which satisfy the usual Dirac (Dirak) equation. The next part of the present paper discusses the interaction of nucleons with ordinary bosons. The corresponding Lagrangians are given explicitly and are discussed. These considerations lead to the usual isobarically invariant theory of the interaction of a pion with nucleons. Free K-mesons are described by a projective representation in which $I^2 = 1$, $C^2 = 1$, $T^2 = -1$, $IT = TI$, $IC = CI$, $TC = CT$. The last 2 parts of the present paper deal with the interaction of K-mesons with nucleons, with Λ- and Σ-particles, and with Ξ-particles. The weak interactions were not investigated from this viewpoint. The problem of the weak interactions is much more difficult and less definite since the conservation of spatial parity no longer holds. The authors thank Professor I. M. Gel'fand

The Properties of Charge Symmetry and the Representations of the Extended Group of Lorentz in the Theory of Elementary Particles

SOV/56-36-1-37/62

facts are shown: If nucleons, Ξ-particles, and K-mesons are described by unusual, projective representations of the extended group, and if the other particles are described in the usual manner, multiplicity, charge symmetry, and pair production of strange particles can be deduced from the standard conservation laws of the number of baryons, of the electric charge and of the invariance with respect to charge conjugation and the total Lorentz group. For the sake of concreteness, all the various species of baryons are assumed to have the same spatial parity and the inversion of ordinary spinors is carried out by means of the operator γ_4.

All the bosons are assumed to be pseudoscalar. The following part of this paper deals with the free nucleon field. The authors then give the commutation relations between the operators I, T, and C. They are satisfied by only 8.8 matrices. These operators, together with the operators of the proper Lorentz group (in which γ_μ has to be replaced by $1 \times \gamma_\mu$), form the

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projective irreducible representation of the Lorentz group. In

24(5)
AUTHORS: Ogiyevetskiy, V. I., [illegible] SOV/56-36-1-37/62

TITLE: The Properties of Charge Symmetry and the Representations of the Extended Group of Lorents in the Theory of Elementary Particles (Svoystva zaryadovoy simmetrii i predstavleniya rasshirennoy gruppy Lorentsa v teorii elementarnykh chastits)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 264-270 (USSR)

ABSTRACT: The present paper endeavors to solve the following problem: if the elementary particles have to be described only by irreducible representations, can the Lorentz (Lorents) group be extended and can irreducible representations of this extended group be found from which the existence of charge multiplets and the properties of charge symmetry would follow automatically? Also the operation of charge conjugation is included in the extended group (besides the proper Lorentz group, L, the spatial reflections I, and the time reflections T). Together with the usual irreducible representations of the extended group, also their projective irreducible representations are investigated (but only those which are necessary for the description of strongly interacting particles). The following

Card 1/4

On the Theory of Multiple Scattering of γ -Rays. PA - 2285

scattering angles. The solution of this transfer equation. The evolution of angular distribution with increasing penetration depth. The state of organic radiation equilibrium. The energy spectrum of gamma radiation in large penetration depths in the approximation of small angles. Consideration of angle deviations. Semi-asymptotic method by SPENCER. V. Other methods of approximation for the computation of multiple scattering: The MONTE-CARLO method. Direct approximation methods. The method of successive passage through thin layers.
By the methods of computation discussed here the general rules governing the propagation of gamma radiation in thick absorbers can be determined and the spatial distribution and energy spectrum of the scattered gamma radiation can be computed with sufficient accuracy for all cases occurring in practice. There follows a voluminous index of publications at the end of this survey. (34 illustrations and 4 tables)

ASSOCIATION: Not given
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Card 2/2

OGIYEVETSKIY, V. I.

AUTHOR: GALISHEV,V.S., OGIYEVETSKIY,V.I., ORLOV,A.B.

TITLE: On the Theory of the Multiple Scattering of γ-Rays. (Teoriya mnogokratnogo rasseyaniya gamma-luchey, Russian). PA - 2285

PERIODICAL: Uspekhi Fiz.Nauk, 1957, Vol 61, Nr 2, pp 161-216 (U.S.S.R.)

Received: 4 / 1957 Reviewed: 5 / 1957

ABSTRACT: The present paper gives a systematical survey of the methods of the theoretical investigation and computation of the multiple scattering of gamma rays hitherto dealt with by various publications. The authors here confine themselves on the investigation of γ-quanta with energies of from 0,05 to 10 MeV. The paper is arranged as follows:
I. Introduction: The main processes of interaction of gamma radiation with matter, the number of quanta, intensity and the factor of increase.
II. The equation of radiation transfer: The equation of transfer and the development of photon density according to LEGENDRE polynomials. The energy spectrum and angular distribution of photons in an unlimited homogeneous medium.
III. The method of polynomial disintegration. Results and comparison with the experiment: The bases of the method of polynomial developments, plane isotropic source, punctiform isotropic source. Numerical results and comparison with experiment:
IV. The approximation of small angles: The energy spectrum of scattered gamma radiation in great penetration depths: Introductory remarks: The equation of the transfer of radiation in the approximation of small

Card 1/2

56-2-41/47

On the Effective Radius of the Multiparticle Forces between a Λ^0- Hyperon and Nucleons.

CARL 3/3

Thus, the two-meson forces between a Λ^0-particle and two nucleons can be realized by virtual processes of the kind

$$\Lambda^0 + N_1 + N_2 \rightarrow \Lambda^{0\prime} + \underbrace{\pi + \pi}_{\text{L}} + N_1 + N_2 \rightarrow \Lambda^{0\prime} + N_1' + N_2'$$

They have the effective radius $1/m_\pi$, so that the Λ^0 -hyperon exchanges only one pion with each nucleon. This conclusion is, however, purely qualitative and results from the uncertainty relation for energy and time. As an example it is easily possible to compute in static approximation the potential of the (Λ^0-N)-forces for the last-mentioned processes.
There are no figures.

ASSOCIATION: United Institute for Nuclear Research.
(Ob"yedinennyy institut yadernykh issledovaniy.)
SUBMITTED: May 3, 1957.
AVAILABLE: Library of Congress.

56-2-41/47

On the Effective Radius of the Multiparticle Forces between a Λ^0 -Hyperon and Nucleons.

(In the general case an even number of pions is concerned): $\Lambda^0 + N \rightarrow \Lambda^{0'} + \pi + \pi + N \rightarrow \Lambda^{0'} + N'$.

Also similar two-pion forces of a somewhat more complicated nature would be conceivable under participation of a Σ -hyperon:

$$\Lambda^0 + N \rightarrow \Sigma + \pi + N \rightarrow \Sigma + N' \rightarrow \Lambda^{0'} + \pi + N' \rightarrow \Lambda^{0'} + N'.$$

The forces of the two last-named types have the effective radius $1/2\ m_\pi$. The existence of the Λ^0-hyperfragments tends to show that the $(\Lambda^0 - N)$-forces are sufficiently efficacious in order to warrant coupling between a Λ^0-hyperon and the nucleons. The question arises as to whether there are $(\Lambda^0$-N)-forces with the usual effective radius $1/m_\pi$? Such forces are actually possible if the interaction between a Λ^0-hyperon with several (e.g. two) nucleons at one and the same time is taken into account.

CARD 2/3

OGIYEVETSKIY, V. I.

AUTHOR Ogiyevetskiy, V.I. 56-2-41/47

TITLE On the Effective Radius of the Multiparticle Forces between a Λ^0-Hyperon and Nucleons.
(O radiuse deystviya mnogochastichnykh sil mezhdu Λ^0-giperonom i nuklonami.)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 2 (8), pp. 546-547 (USSR)

ABSTRACT The forces between a Λ^0-hyperon and a nucleon [(Λ^0-N)forces], which are compatible with isotopic invariance, have a range of action that is several times smaller than the ordinary nuclear forces. The experiments concerning the formation of pairs tend to indicate the existence of forces which are caused by virtual processes by the exchange of a K-meson: $\Lambda^0 + N \rightarrow N' + \bar{K} + N \rightarrow N' + \Lambda^{0'}$ They have the effective radius $1/m_K$, i.e. about three times as small as the radius between the nucleons ($1/m_\pi$). Isotopic invariance permits interactions in which the Λ^0-hyperon is virtually exchanged with a nucleon with two pions.

CARD 1/3

or in symbolic form:

$$S = \int_{-\infty}^{+\infty} ds \cdot \exp\left[-\frac{is}{g}\right] T\left\{\delta(s) - \frac{\xi(s)}{2}\sqrt{\frac{a}{s}}\ J_1\left(2\sqrt{as}\right)\right\} \qquad (3)$$

Dokl. Akad. Nauk, 109, fasc. 5, 919-922 (1956) CARD 4 / 4 PA - 1370

Here $a = i\int d^4x N(\bar{\Psi}(x)\gamma\Psi(x))\varphi(x)$, and $J_1(y)$ denotes a BESSEL function.

In the expression (2) S is a generalized function of $1/g$. In just this expression, the infinities, by the use of the terms of renormalization, must be eliminated for S just like in the case of the formula (1). The series in (2) can converge also if the series in (1) diverges. Thus the development in series according to the powers of the coupling constant satisfies the corresponding physical quantity at very general conditions.

As the series in the representation (2) is most probably convergent it follows from the present deliberations that the application of potential developments as intermediate stage is allowed for renormalizations, for the derivation of equations, etc.

The series according to powers of the coupling constant must, by the way, not be broken off. The success of the perturbation theory in quantum electrodynamics is apparently based only upon the fact that the series (1) is asymptotic and that the coupling constant is very small.

The representation (3) permits a development according to inverse powers of the coupling constant g by the development of $e^{-is/g}$ according to the powers of the argument, for from (3) there follows

$$S = \sum_{n=0}^{\infty} \frac{(-i)^n}{n!}\left(\frac{1}{g}\right)^n \int_{-\infty}^{+\infty} s^n T\left\{\delta(s) - \frac{\xi(s)}{2}\sqrt{\frac{a}{s}}\ J_1\left(2\sqrt{as}\right)\right\} ds,$$

if the development according to $1/g$ exists.

INSTITUTION: Electrophysical Laboratory of the Academy of Sciency in the USSR.

magnetic field. Here m denotes the mass of the electron. The perturbation theory furnishes for L' the series

$L' = -(1/6\pi^2) \sum_{n=2}^{\infty} ((2n-3)!/(2n)!) 2^{2n} B_{2n} H^{2n} m^{-4n+4} e^{2n}$. Here B_{2n} denotes the BERNOULLI numbers. With $n \gg 1$ it is true that $B_{2n} \sim (-1)^{n-1}((2n)!/2^{2n-1}\pi^{2n})$, and therefore the above series diverges in the case of all e with the exception of $e = 0$, and is asymptotic. Herefrom IOFFE concludes that the perturbational method leading to a diverging series is useless in spite of the fact that the first-named expression for L' exists.

Here it is now shown that the summation of the mentioned development in series for L' by BOREL'S method furnishes the corresponding formula for L'. These deliberations do not indicate the uselessness of the formula given for L' but the fact that summation must be understood in a more general than the classical sense.

For the scattering matrix it is true in the representation of the interaction that $i\partial S/\partial t = \{ -ig \int d^3x\, N(\bar{\psi}(x) \gamma \psi(x)) \varphi(x) + \text{"renormalization terms"} \} S$. It is usually written down as a series according to powers of the coupling constant g:

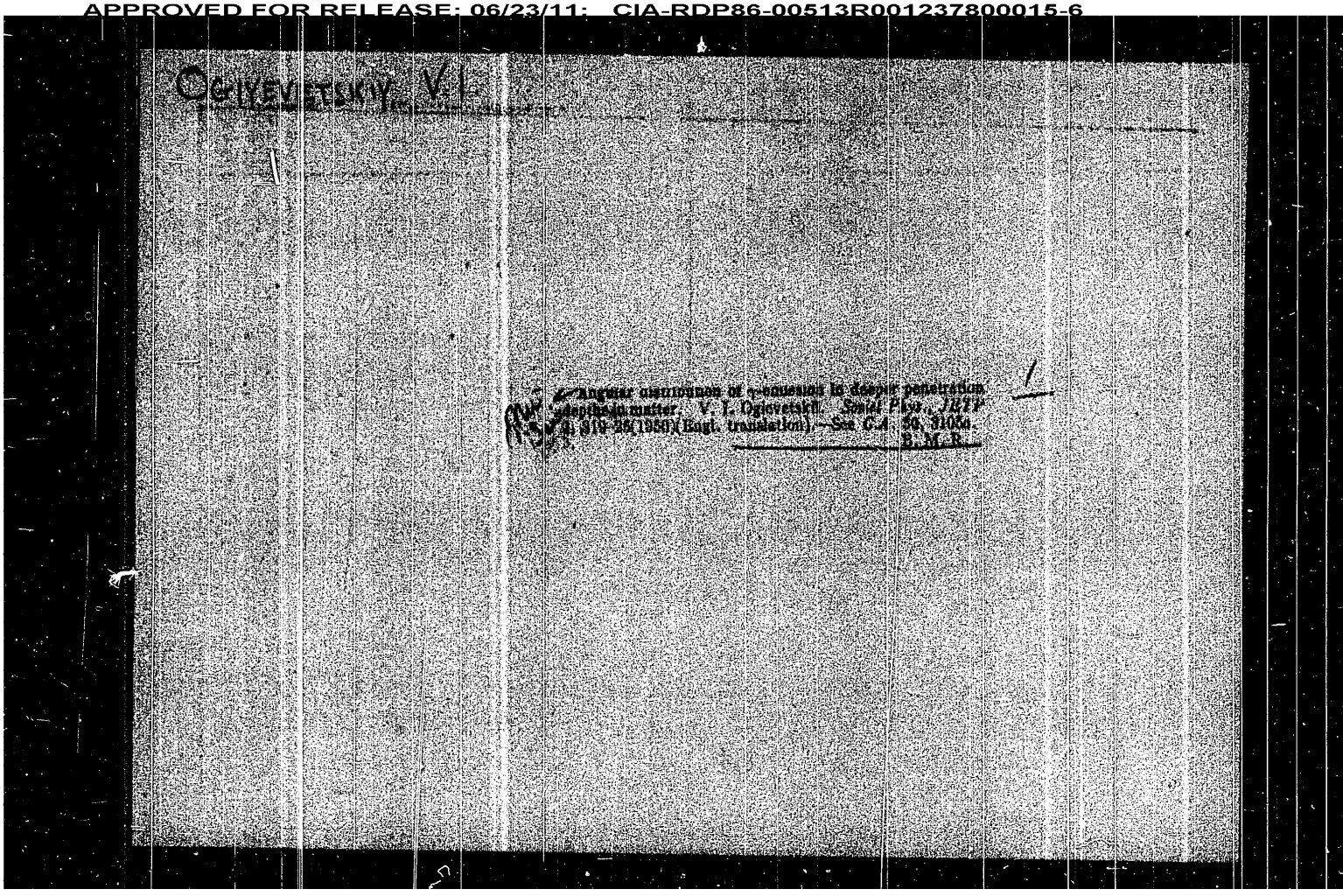
OGIYEVETSKIY, V.I.

SUBJECT USSR / PHYSICS CARD 1 / 4 PA - 1370
AUTHOR OGIEVECKIJ, V.I.
TITLE On a Possibility for the Interpretation of the Series of the Perturbation Theory in the Quantum Theory of the Field.
PERIODICAL Dokl.Akad.Nauk, 109, fasc.5, 919-922 (1956)
Issued: 10 / 1956 reviewed: 10 / 1956

According to the opinion of various authors the aforementioned series can be divergent also if the infinities are excluded from individual terms. Here it is shown that a certain value may be ascribed to a perturbational series if it is interpreted in the spirit of the summation methods (G.HARDY, "Divergent Series", Publishing House for Foreign Literature, Moscow 1951) and not in the narrow classical sense of CAUCHY. By means of the theory of generalizing functions a method of summation is developed here, with the help of which a representation of the S-matrix is found that is more acceptable than the usual one and which, in principle, permits analysis according to negative powers of coupling constants.
The author begins with an interesting example by B.L.IOFFE (Dokl.Akad.Nauk, 94, 437 (1954), J.SCHWINGER (Phys.Rev. 82, 664 (1951)). IOFFE, without using the perturbation theory, obtained

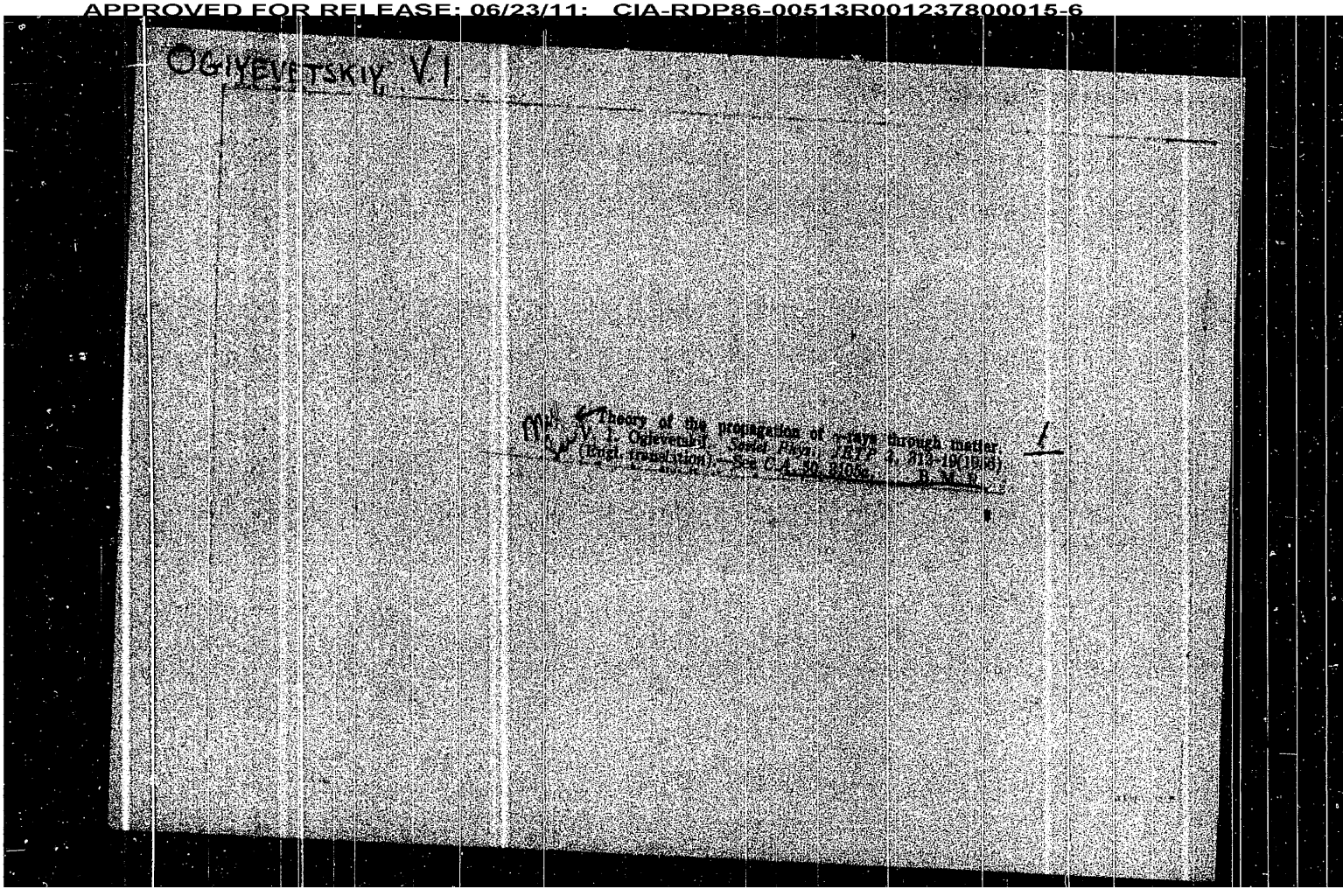
$L^{(1)} = -(1/8\pi^2)\int_0^\infty (ds/s^3)e^{-m^2 s}\left\{ esH\ \mathrm{cth}(esH) - 1 - (esH)^2/3 \right\}$ for the additional

term which is due to the polarization of the vacuum by a constant exterior



OGIYEVETSKIY, V. I.

Angular distribution of γ-quanta in deep penetration depths in matter. V. I. Ogiyevetskii. *Soviet Phys., JETP* 6, 919-28(1958)(Engl. translation).—See C.A. 52, 3105a.
B. M. B.



OGIYEVETSKIY, V.I.

USSR/Nuclear Physics - Gamma rays FD-2908

Card 1/1 Pub. 146 - 8/19

Author : Ogiyevetskiy, V. I.

Title : Angular distribution of gamma radiation at great depths of penetration into matter

Periodical : Zhur. eksp. i teor. fiz., 29, October 1955, 464-472

Abstract : The author finds the distribution of gamma rays according to angles and energies at great depths of penetration into matter in the case of constant coefficient of absorption and in the case of coefficient linearly dependent upon the wave length. He considers the passage of gamma rays through an inhomogeneous medium.

Institution :

Submitted : June 25, 1954

OGIYEVETSKIY, V. I.

FD-2907

USSR/Nuclear Physics - Gamma rays

Card 1/1 Pub. 146 - 7/19

Author : Ogiyevetskiy, V. I.

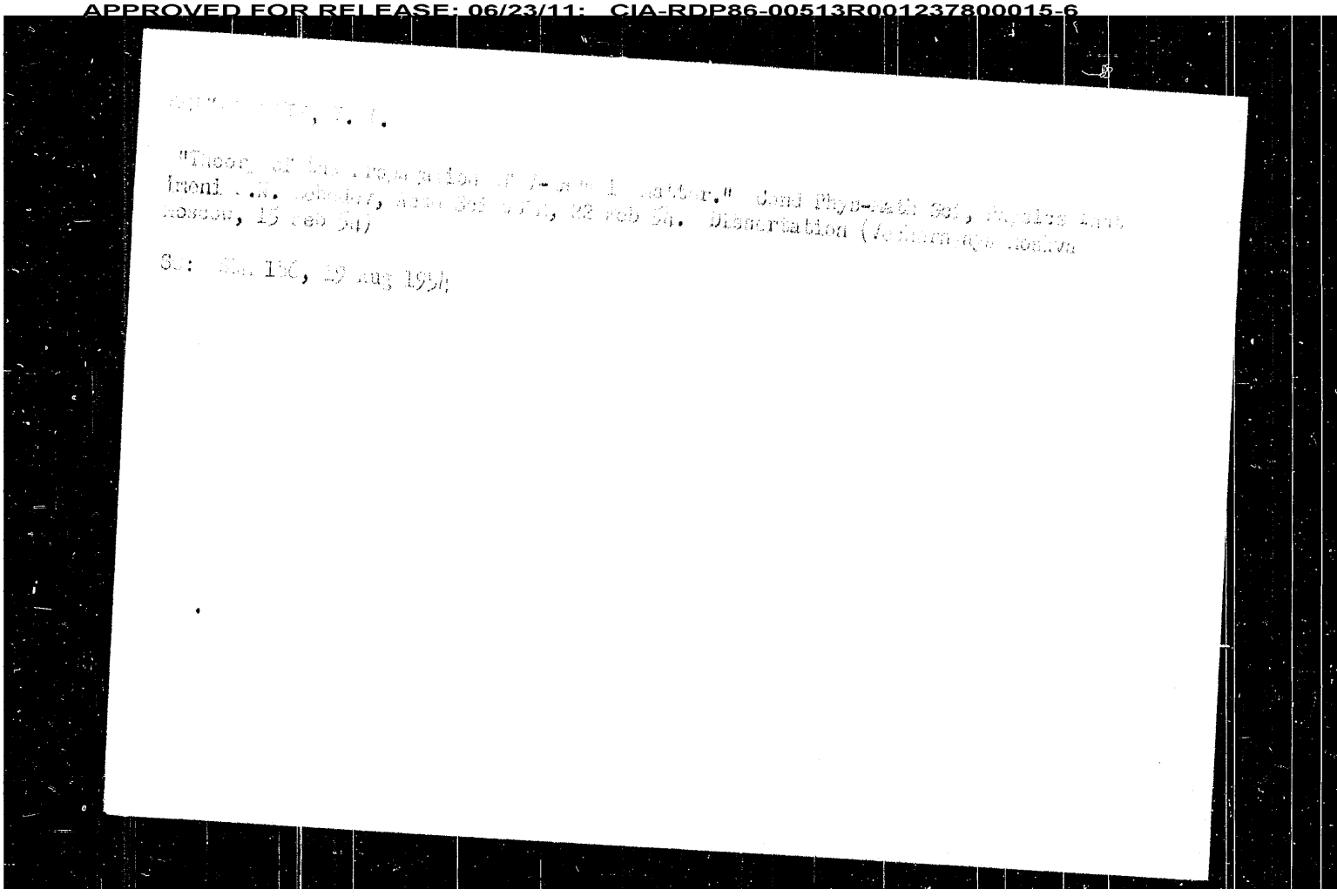
Title : Theory of the propagation of gamma rays through matter

Periodical : Zhur. eksp. i teor. fiz., 29, October 1955, 454-463

Abstract : The author finds the distribution of gamma rays according to angles and energies as a function of the depth of penetration into matter in the case of initial energy of the order of several Mev. The problem is: If a parallel beam of monochromatic gamma rays is incident perpendicularly to the flat surface of a layer of matter, how will the angular and energy distributions depend upon depth, primary energy, and properties of matter? The investigation of angular distribution at great depths of penetration will be given in another work. The author thanks Professors S. Z. Belen'kiy and Ye. L. Feynberg and Academician I. Ye. Tamm. Eight references: e.g. S. Z. Belen'kiy, Lavinnyye protsessy v kosmicheskikh luchakh [Shower processes in cosmic rays], State Technical Press, Moscow-Leningrad, 1948.

Institution :

Submitted : June 25, 1954



[redacted], S. I.

"Theory of the Absorption of Fast Mu Mesons by Matter." Cand Phys-Math Sci, Physics Inst Irvend. A.N. Lebedev, Acad Sci USSR, 22 Feb 54. Dissertation (Kratkoye Soderzh Moskva, 15 Feb 54)

SO: Vek Fiz, 29 Aug 1954

189T80

USSR/Nuclear Physics - Dispersion Jul 51

"Correlation During Multiple Dispersion in a Magnetic Field," V. I. Ognevetskiy, Dnepropetrovsk State U

"Zhur Eksper i Teoret Fiz" Vol XXI, No 7, pp 775-779

Author discusses effect of multiple dispersion on motion of charged particles moving in const magnetic fld perpendicular to plane of motion and arbitrarily varying along axis of motion. Angular distribution in a middle point B is

LC

189T80

USSR/Nuclear Physics - Dispersion (Contd) Jul 51

studied, for the case where particle passes through points A, B and C. Fixing of point C narrows angular scattering in point B. Submitted 11 Jul 50.

LC

189T80

OGNEVETSKIY, V. I.

GIYEVETSKIY, I.Ye., prof.

Relation between Abel's method of summation and the method of the arithmetic mean. Trudy DIIT no.24:275-279 '54. (MIRA 16:11)

OGIYEVETSKIY, I. YE.

USSR/Mathematics - Summation 11 Sep 53

"Comparability of the Methods for Abel and Cesaro (C,a,b) Summation," I. Ye. Ogiyevetskiy, Dneprope-trovsk Inst of Transport Engineers im L. M. Kagano-vich

DAN SSSR, Vol 92, No 2, pp 231-234

States that the methods of Abel and Cesaro and many other methods for the summation of double series are not comparable; i. e., there are series sum-mable by the Abel method which are not summable by the Cesaro method, and vice versa. Hence the

269T79

interest in establishing supplementary conditions for which these methods are comparable. Demon-strates that the method of arithmetic means (C,a,b) (a,b nonzero and positive) includes the Abel method also as one case of unbounded Cesaro sums. Presented by Acad S. N. Bernshteyn 8 Jul 53.

OGIYEVETSKI, I.E.

Among the Reports of the Academy of Sciences of the USSR. an article by OGIYEVETSKI, I.E. "Generalization of Landau's theorem on functional series." (Mathematics) is listed.

SO: Doklady Akademii Nauk SSSR, #9, Vol LI, 1946, Unclassified.

OGIYEVETSKIY, I.I. (Dnepropetrovsk); BOYTSUN, L.G. (Dnepropetrovsk)

A theorem proposed by E. Titchmarsh. Izv. vys. ucheb. zav.; mat. no.4:100-103 '65. (MIRA 18:9)

OGIYEVETSKIY, I.I.

Inclusions between regular methods. Uch. zap. Kaz. un. 124 no.6: 241-265 '64. (MIRA 18:9)

OGIYEVETSKIY, I.I.

Some Tauberian theorems. Usp. mat. nauk 19 no.4:189-196 '64.
(MIRA 17:10)

OGIYEVETSKIY, I.I. (g. Dnepropetrovsk)

Theory of the summing of series by Borel's method. Part 2.
Izv. vys. ucheb. zav.; mat. no.3:100-110 '64.
(MIRA 17:12)

OGIYEVETSKIY, I.I.

Effectiveness of a regular matrix. Izv. AN SSSR. Ser. mat. 27 no.2: 329-342 Mr-Ap '63. (MIRA 16:4)
(Matrices) (Sequences (Mathematics))

OGIYEVETSKIY, I.I.

Problem of the effectiveness and noneffectiveness of regular matrices. Dokl. AN SSSR 143 no.5:1050-1052 Ap '62. (MIRA 15:4)

1. Predstavleno akademikom A.N.Kolmogorovym.
(Matrices) (Sequences (Mathematics))

OGIYEVETSKIY, I.I.

Cardinal number of a set of sequences linearly independent with respect to a relatively regular matrix. Usp.mat.nauk 17 no.1: 209-213 Ja-F '62. (MIRA 15:3)

(Series) (Matrices)

OGIYEVETSKIY, I.I. (Dnepropetrovsk)

Problems offered to the tenth grade students at the 1961 Mathematical Olympiad in Dnepropetrovsk. Mat. v shkole no.3:94 My-Je '62. (MIRA 15:7)
(Mathematics--Problems, exercises, etc.)

OGIYEVETSKIY, I.I. (Dnepropetrovsk)

Work of the school mathematical circle at the Dnepropetrovsk State University. Mat. v shkole no.1:89 Ja-F '61. (MIRA 14:3)
(Dnepropetrovsk—Mathematics—Study and teaching)

On Cauchy's problem for the ...

The following result is obtained: If the initial functions $U_1(x)$ and $U_2(x)$ satisfy

$$/u_i(x)/ \leqslant C \exp\{\epsilon/x/\ln(1+/x/)\},\ \epsilon\, rh < 1,\ i = 1, 2, \quad (6)$$

then the solution of Cauchy's problem for (1) and (2) gives (4) and (5) and this solution is unique, and continuously dependent on the initial functions $u_1(x)$ and $u_2(x)$. [Abstractor's note: Apparent change of notation]. (4) and (5) may be differentiated an arbitrary number of times, provided that the resulting series are uniformly convergent to an arbitrary finite integral of t. There are 6 Soviet-bloc references.

ASSOCIATION: Dnipropetrovs'kyy derzhavnyy universytet (State University of Dnepropetrov'sk)

PRESENTED: by V.B. Hnyedenko, Academician AS UkrSSR

SUBMITTED: February 22, 1960

Card 5/5

On Cauchy's problem for the ...

where $I_n(x)$ is an n-th order Bessel function. This formula is the solution of Cauchy's problem for the difference-differential analogue of the equation of the oscillation of a beam

$$\frac{\partial^2 u}{\partial t^2} + \frac{\partial^4 u}{\partial x^4} = 0.$$

In the case r = 1 then, after various transformations (4) becomes

$$u(x,t) = \sum_{k=-\infty}^{\infty} I_{2k}\left(\frac{2t}{h}\right) u_1(x+kh) + \sum_{k=-\infty}^{\infty} \int_0^t I_{2k}\left(\frac{2\tau}{h}\right) d\tau u_2(x+kh).$$

which is the solution of Cauchy's problem for the difference-differential analogue of the wave equation

$$\frac{\partial^2 u}{\partial t^2} = \frac{\partial^2 u}{\partial x^2}.$$

Card 4/5

On Cauchy's problem for the ...

$$\left| \times \cos 2k\varphi \cdot d\varphi \cdot u_1(x+kh) + \sum_{-\infty}^{\infty} \frac{1}{\pi} \int_0^t \int_0^{\pi/2} \left\{ \exp\left(\frac{2\sin\varphi}{h} \right)^r \tau + \right. \right. \tag{5}$$

$$\left. \left. + \exp - \left(\frac{2\sin\varphi}{h} \right)^r \tau \right\} \cos 2k\varphi d\varphi d\tau u_2(x+kh), \right. \tag{5}$$

where (4) is the solution of (1) for odd r and (2) for even r, and (5) is the solution of (1) for even r and (2) for odd r. In the case r = 2, (4) becomes, after various transformation

$$u(x,t) = \sum_{k=-\infty}^{\infty} \cos\left(\frac{2t}{h^2} - k\frac{\pi}{2} \right) I_k\left(\frac{2t}{h^2} \right) u_1(x+kh) +$$

$$+ \sum_{k=-\infty}^{\infty} \int_0^t \cos\left(\frac{2\tau}{h^2} - k\frac{\pi}{2} \right) I_k\left(\frac{2\tau}{h^2} \right) d\tau u_2(x+kh),$$

Card 3/5

On Cauchy's problem for the ...

where u(x, t) satisfies the initial conditions

$$u(x, 0) = u_1(x) \quad \frac{\partial u}{\partial t}\Big|_{t=0} = u_2(x). \tag{3}$$

Using a Fourier transformation, an effective solution is found to be

$$u(x, t) = \begin{cases} \sum_{k=-\infty}^{\infty} \frac{2}{\pi} \int_0^{\pi/2} \cos\left(\frac{2\sin\varphi}{h}\right)^r t \cos 2k\varphi d\varphi u_1(x + kh) + \\ + \sum_{k=-\infty}^{\infty} \frac{2}{\pi} \int_0^t \int_0^{\pi/2} \cos\left(\frac{2\sin\varphi}{h}\right)^r \tau \cos 2k\varphi d\varphi d\tau u_2(x + kh), \end{cases} \tag{4}$$

$$\sum_{k=-\infty}^{\infty} \frac{1}{\pi} \int_0^{\pi/2} \left\{ \exp\left(\frac{2\sin\varphi}{h}\right)^r t + \exp -\left(\frac{2\sin\varphi}{h}\right)^r t \right\} \times \tag{5}$$

Card 2/5

OGIYEVETSKIY, I.I

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D251/D305

16.3400

AUTHOR: Ohiyevets'kyy, I.I.

TITLE: On Cauchy's problem for the difference-differential equation $\frac{\partial^2 u}{\partial t^2} = \pm \frac{\Delta^{2r} u(x, t)}{h^{2r}}$

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 1, 1961, 3 - 5

TEXT: The author considers Cauchy's problem for the equations

$$\frac{\partial^2 u}{\partial t^2} = \frac{\Delta^{2r} u(x, t)}{h^{2r}}, \qquad (1)$$

$$\frac{\partial^2 u}{\partial t^2} = - \frac{\Delta^{2r} u(x, t)}{h^{2r}}, \qquad (2)$$

Card 1/5

OGIYEVETSKIY, I.I.

Theory of the summation of series by the Borel method. Izv. vys. ucheb. mat. no. 6:174-183 '60. (MIRA 14:1)

1. Dnepropetrovskiy gosudarstvennyy universitet.
(Series)

16(1)

AUTHOR: Ogiyevetskiy,I.I. SOV/42-14-2-18/19

TITLE: To the Editorial Staff of the Journal "Uspekhi matematicheskikh nauk"

PERIODICAL: Uspekhi matematicheskikh nauk,1959,Vol 14,Nr 2,p 262 (USSR)

ABSTRACT: This is a correction of a misprint in Uspekhi matematicheskikh nauk, 1958, Vol 13, Nr 6, p 125: In the references the name of the author of [7] and [8] reads correctly I.Ye.Ogiyevetskiy.

Card 1/1

On the Summability of Series of Borel's Method of Fractional Order

of total inclusion, that it is convex, that the advantage of this method increases with α and that Schmidt's tauberian theorem for exponential methods of summability (which corresponds to $\alpha=0$ in the author's designation) holds for method (B, α) with any α. The (B, α) method is also compared with Abel's general method and with the methods of Euler, Cesaro and Voronoy.
There are 8 references, 2 of which are Soviet, 2 French, 2 German, 1 English and 1 Italian.

ASSOCIATION: (Dnepropetrovskiy gosudarstvennyy universitet) (Dnepropetrovsk State University).

PRESENTED: By B. V. Gnedenko, Member, AS UkrSSR

SUBMITTED: February 18, 1959

Card 2/2

16 (1) SOV/21-59-8-1/26

AUTHOR: Ohiyevets'kyy, I. I. (Ogiyevetskiy, I. I.)

TITLE: On the Summability of Series by Borel's Method of Fractional Order

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1959, Nr 8, pp 815 - 818 (USSR)

ABSTRACT: The classical methods of summability of Borel (integral and exponential) are well known, [Ref. 1]. The work of E. Le Roy [Ref. 2] and to a certain extent the recently published similar works of Vlodarskiy [Ref. 3], are dedicated to the generalization of these methods. In this article, the author discusses an interesting paper by Sannia [Ref. 4] in which he introduces a sequence of methods of summability of all integer orders, Borel's integral and exponential method being particular cases of this sequence. In this paper, Sannian's definition is extended to every real index $\alpha, -\infty < \alpha < +\infty$ and the properties of this definition, denoted as (B,α) are considered in detail. It is shown, that the method of summability (B,α) satisfies the condition

Card 1/2

On the Theory of Summation of Bounded Sequences SOV/140-59-2-18/30
With the Aid of Toeplitz Matrices

bounded sequence x_1. Then there exist non-denumerably many bounded sequences being summable with B and being linearly independent with respect to A.
There are 3 references, 1 of which is Soviet, 1 Canadian, and 1 [illegible]

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University)

SUBMITTED: March 10, 1958

Card 2/2

16(1)

AUTHOR: Ogiyevetskiy, I.I. SOV/140-59-2-18/30

TITLE: On the Theory of Summation of Bounded Sequences With the Aid of Toeplitz Matrices (K teorii summirovaniya ogranichennykh posledovatel'nostey matritsami Teplitsa)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 2, pp 183-188 (USSR)

ABSTRACT: Let x be a sequence of real numbers. According to A.D.Bruno [Ref 1] the sequences $x_1, x_2, \ldots, x_n$ are called linearly independent with respect to the Toeplitz matrix T if for arbitrary $\lambda_1, \lambda_2, \ldots, \lambda_n$ the linear combination $\lambda_1 x_1 + \ldots + \lambda_n x_n$ with T is not summable. A given set of bounded sequences is called linearly independent with respect to T if an arbitrary finite number of sequences of this set is linearly independent with respect to T.
Theorem: To every T there exist non-denumerably many bounded sequences linearly independent with respect to T. Every T which sums a bounded divergent sequence, sums non-denumerably many bounded sequences which diverge simultaneously with all their linear combinations.
Theorem: Let A and B be two T-matrices. Let B sum all bounded sequences which are summed by A, and besides still at least one

Card 1/2

On the Theory of the Fractional Differentiation and Integration of Periodic Functions of the Class L_p, $p > 1$ 20-3-7/59

Theorem: From $E_n^p f(x) = 0(1/n^\beta)$, $\beta > 0$, there follows $E_n^p f_\alpha(x) = 0(1/n^{\alpha+\beta})$

Theorem: From $E_n^p f(x) = 0(1/n^\beta)$, $0 < \gamma < \beta$ there follows the existence of $f^\gamma(x)$, where $E_n^p f^\gamma(x) = 0(1/n^{\beta-\gamma})$.

Let $\mathrm{Lip}(\alpha,p)$ denote the Lipschitz-class and Λ_p^* the Zygmund-class.

Theorem: From $f^\beta \subset \mathrm{Lip}(\alpha,p)$ there follows

$(f_\gamma)^\delta \subset \mathrm{Lip}(\alpha+\beta+\gamma-\delta,p)$ for $0 < \alpha+\beta+\gamma-\delta < 1$

$(f_\gamma)^\delta \subset \Lambda_p^*$ for $\alpha+\beta+\gamma-\delta = 1$

and 14 further similar relations.

Beside of the mentioned theorems there are further 5 partially vary extensive theorems which describe in detail the possible transitions of the considered functions from one class into the other class at a fractional differentiation or integration.

3 Soviet and 8 foreign references are quoted.

PRESENTED: By S.N.Bernshteyn, Academician, 15 July 1957
SUBMITTED: 22 April 1957
AVAILABLE: Library of Congress

Card 2/2

OGIYEVETSKIY, I.I.

AUTHOR: OGIYEVETSKIY, I.I. 20-3-7/59

TITLE: On the Theory of the Fractional Differentiation and Integration of Periodic Functions of the Class L_p, $p>1$ (K teorii drobnogo differentsirovaniya i integrirovaniya periodicheskikh funktsiy prinadlezhashchikh klassu L_p, $p>1$)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol.118, Nr.3, pp.443-446 (USSR)

ABSTRACT: Let $E_n^p f(x)$ be the best approximation by trigonometric polynomials of $f(x)$ in the metric L_p. Let $f(x+2\pi) = f(x)$, $\int_0^{2\pi} f(x)\,dx = 0$.

Let the fractional integral of the order α be denoted by

$$f_\alpha(x) = \cos\frac{\pi\alpha}{2} \sum_{\nu=1}^{\infty} \frac{A_\nu(x)}{\nu^\alpha} + \sin\frac{\pi\alpha}{2} \sum_{\nu=1}^{\infty} \frac{B_\nu(x)}{\nu^\alpha},$$

where $\sum A_\nu(x)$ denotes the Fourier series of $f(x)$ and $\sum B_\nu(x)$ denotes the conjugate series. Let $f^\alpha(x) = f_{-\alpha}(x)$ denote the fractional derivative of order α of $f(x)$.

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$$\sigma_{m,n}^{\alpha,\beta} = \begin{cases} O(n^{\delta}) & \text{for } \delta < \alpha+1 \\ o(n^{\delta}) & \text{for } \delta = \alpha+1 \end{cases}$$

$$\sigma_{m,n}^{\alpha,\beta} = \begin{cases} O(m^{\gamma}) & \text{for } \gamma < \beta+1 \\ o(m^{\gamma}) & \text{for } \gamma = \beta+1 \end{cases}$$

$|\sigma_{m,n}^{\alpha,\beta}| \leq C$ if $m,n > M$, M integral.

Then (1) is boundedly summable with the sum s according to Abel.

There are 9 references, 7 of which are Soviet, 1 German, and 1 Polish.

SUBMITTED: March 15, 1957

Summation of Double Series With Methods of Cesaro and Abel in the Bounded Sense

SOV/42-13-6-14/33

c_o = const. Let (1) be boundedly summable with the sum s according to the method (C, α, β) if $\lim_{(m,n)\to\infty} \epsilon_{m,n}^{\alpha,\beta} = s$; (m,n) means that $\frac{1}{\lambda} \leq \frac{m}{n} \leq \lambda$, let there exist the limit value for every $\lambda \geq 1$. (1) is called boundedly summable according to Abel with the sum s if $\lim_{(x,y)_\lambda \to 1} f(x,y) = s$, where $f(x,y) = \sum_{i=o,j=o}^{\infty} a_{ij} x^i y^j$, the limit exists for every $\lambda \geq 1$ and $(x,y)_\lambda$ means that $\frac{1}{\lambda} \leq \frac{1-x}{1-y} \leq \lambda$.

Theorem: If (1) is (C, α, β)-bounded and (C, α, β) boundedly summable with the sum s, then (1) is also boundedly summable with the sum s according to Abel.

Theorem: If (1) is (C, α, β)-bounded and (C, α, β) boundedly summable, then it is also $(C, \alpha+\eta, \beta+\delta)$ boundedly summable with the same sum (η and δ are arbitrary positive numbers).

Theorem: Let (1) be (C, α, β)-boundedly summable with respect to s, let

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AUTHOR: Ogiyevetskiy, I.I. SOV/42-13-6-14/33

TITLE: Summation of Double Series With Methods of Cesaro and Abel in the Bounded Sense (Summirovaniye dvoynykh ryadov metodami Chezaro i Abelya v ogranichennom smysle)

PERIODICAL: Uspekhi matematicheskikh nauk, 1958, Vol 13, Nr 6, pp 119-125 (USSR)

ABSTRACT: For the double series

(1) $\sum a_{ij}$

let $S_{kl} = \sum_{i=0,j=0}^{k,l} a_{ij}$, $S_{mn}^{\alpha,\beta} = \sum_{k=0,l=0}^{m,n} A_{m-k}^{\alpha-1} A_{n-l}^{\beta-1} S_{kl}$, where

$A_m^{\alpha} = \frac{(\alpha+1)(\alpha+2)\ldots(\alpha+m)}{m!}$. The Cesaro mean of the order $\alpha > -1$, $\beta > -1$ is

$$\sigma_{m,n}^{\alpha,\beta} = \frac{S_{m,n}^{\alpha,\beta}}{A_m^{\alpha} A_n^{\beta}} .$$

(1) is called (C, α, β)-bounded if $|\sigma_{m,n}^{\alpha,\beta}| \leq c_0$ $(m,n=0,1,2,\ldots)$,

Card 1/3

OGIYEVETSKIY, I.I.

Ogievetskiĭ, I. I. Some Tauberian theorems of N. Wiener's type for functions of two variables. Czechoslovak Math. J. 8(83) (1958), 76-85. (Russian. English summary)

Let K_1 and K_2 be functions in $L_1(-\infty, \infty)$ whose Fourier transforms vanish nowhere, and let $h(x, y)$ be a bounded measurable function defined for all real x and y. Suppose that

$$\lim_{(x,y)\to\infty} \int_{-\infty}^{\infty} K_1(x-u)K_2(y-v)h(u, v)dudv = s\int_{-\infty}^{\infty} K_1(u)K_2(v)dudv.$$

Then the same equality holds with K_j replaced by arbitrary functions $K_j^* \in L_1(-\infty, \infty)$ $(j=1, 2)$. The proof is a simple adaptation of Wiener's Tauberian theorem. An analogous result holds for Mellin transforms. Applications are made to Abel and $(C, 1)$ summability of double sequences and to (C, α, β) summability of double integrals.

E. Hewitt (Seattle, Wash.)

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21-58-5-4/28

Generalization of P. Civin's Inequality for the Fractional Derivative of a Trigonometric Polynomial to a Case of L_p - Space

SUBMITTED: October 1, 1957

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Polynomials--Theory

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21-58-5-4/28

Generalization of P. Civin's Inequality for the Fractional Derivative of a Trigonometric Polynomial to a Case of L_p - Space

case of L_p - metric, where $p \geq 1$. Assuming

$$\|f\|_p = \left\{ \int_{-\pi}^{\pi} |f|^p dx \right\}^{\frac{1}{p}}$$

the author shows that the following inequality holds

$$\|T_n^{\alpha}\|_p \leq C(\alpha) \cdot n^{\alpha} \|T_n\|_p \quad (p \geq 1)$$

where $C(\alpha)$ denotes some constant depending on α alone. This inequality represents a generalization of Civin's inequality to which it reduces for $p = \infty$.
There are 7 references, 1 of which is Soviet, 3 American, 2 English and 1 Hungarian.

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University)

PRESENTED: By Member of the AS UkrSSR, B.V. Gnedenko

Card 2/3

AUTHOR: Ogiyevetskiy, I.I. 21-58-5-4/28

TITLE: Generalization of P. Civin's Inequality for the Fractional Derivative of a Trigonometric Polynomial to a Case of L_p - Space (Obobshcheniye neravenstva Sayvina o proizvodnoy drobnogo poryadka trigonometricheskogo mnogochlena na sluchay prostranstva L_p)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 5, pp 486-488 (USSR)

ABSTRACT: P. Civin [Ref 1] has generalized the Bernstein inequality concerning derivative of a trigonometric polynomial to a case of a fractional derivative of the order α which is defined as follows:

$$T_n^{\alpha}(x) = \cos\frac{\pi\alpha}{2}\sum_{K=1}^{n} K^{\alpha}A_K(x) - \sin\frac{\pi\alpha}{2}\sum_{K=1}^{n} K^{\alpha}B_K(x)$$

where $A_k(x) = a_k\cos kx + b_k\sin kx$; $B_k(x) = a_k\sin kx - b_k\cos kx$ for a trigonometric polynomial of the form:

$$T_n(x) = \frac{a_0}{2} + \sum_{K=1}^{n}(a_K\cos Kx + b_K\sin Kx)$$

Card 1/3 The author proves that an analogous result holds also for a

OGIYEVETSKIY, I.I.

Mathematics clubs and contests in Dnepropetrovsk. Mat. pros. no.3:238-240 '58. (MIRA 11:9)
(Dnepropetrovsk--Mathematics)

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Generalization of some of the results obtained by G.H. Hardy, S.E. Littlewood, and A. Zygmund on fractional integration and differentiation of periodic functions. Ukr.mat.zhur. 9 no.2:205-210 '57. (MLRA 10:7)

(Functions, Periodic)

OGIYEVETSKIY, I. I.

1 Typed

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress * (Cont.) Moscow Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., IZdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

There are 2 references, 1 of which is USSR, and the other English.

There are 3 references, 1 of which is USSR, 1 Danish and 1 German.

Card 29/80

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Summation of double series. Dokl.AN SSSR 95 no.4:713-716 Ap '54.
(MLRA 7:3)

1. Dnepropetrovskiy gosudarstvennyy universitet. (Series)

OGIYEVETSKIY, I. I.

USSR/Mathematics - Fourier Series, Summation 11 May 51

"An Exact Evaluation," I. I. Ogiyevetskiy

"Dok Ak Nauk SSSR" Vol LXXVIII, No 2, pp 201-204

Developing the methods of Nagy and N. I. Akhiyezer, the author obtains an exact value for max sup $/f(x) - U_n(f,x)/$ in the case of one general class of matrices, which includes a number of familiar methods of summation; here U_n the q_{nk}-mean Fourier series of a matrix q. Acknowledges the interest and comments of S. M. Nikol'skiy and I. Ye. Ogiyevetskiy. Submitted by Acad S. N. Bernshteyn 19 Feb 51.

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SAMOSUDOVA, N.V.; KALAMAROVA, M.V.; OGIYEVETSKAYA, M.M.

Localization of actin and tropomyosin in extracted and intact myofibrils. Biofizika 10 no.2:268-271 '65. (MIRA 18:7)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

KALAMKAROVA, M.B.; SAMOSUDOVA, N.V.; KRYUKOVA, M.Ye.; OGIYEVETSKAYA, M.M.

Studies on the localization of contractile muscle proteins following denervation with the aid of labeled antibodies. Biofizika 8 no.6:696-698 '63. (MIRA 17:7)

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BONDARENKO, M.G. [Bondarenko, M.H], inzh.; OGIYETS, M.S. [Ohiiets', M.S.], inzh.

Self-propelled grain combine for sloping ground. Mekh. sil'. hosp. 12 no.7:31-32 Jl '61. (MIRA 14:6)
(Combines(Agricultural machinery))

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Herniations of Douglas' pouch. Khirurgiia 39 no.11:119-121 N '63.
(MIRA 17:11)

1. Iz khirurgicheskogo otdeleniya (nachal'nik I.V. Abalakin) Otdelencheskoy bol'nitsy (nachal'nik Bogaychuk) stantsii Ulan-Ude Vostochno-Sibirskoy zheleznoy dorogi.

OGIYENKO, V.S., uchitel'; OGIYENKO, S.V., uchitel'

Use of the semimicromethod for solving experimental problems of a qualitative nature. Khim. v shkole 16 no.2:42-47 Mr-Ap '61.
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1. Srednyaya shkola No.3, Irkutsk.
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OGIYENKO, V.S.

Effect of sulfates and chlorides on the potentiometric determination of bromides with hypochlorite. Zhur. prikl. khim. 33 no.11:2486-2490 N '60. (MIRA 14:4)

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OGIYENKO, V.S.; MASLOVA, S.V. (g. Irkutsk)

Working with small quantities of reagents. Khim. v shkole 13 no.6:70-75 N-D '58. (MIRA 11:12)
(Chemistry--Experiments)