

KACL, J.; KOLAR, J.; MARX, F.; PALECEK, L.; POTOCKY, V.

Osseous changes as sequelae of post-traumatic vascular diseases. Cesk. rentgenol. 16 no.2:109-115 Ap '62.

1. Radiologicka klinika fakulty vseobecneho lekarstvi University Karlovy v Praze, prednosta prof. dr. V. Svab.

(BONE DISEASES etiol)
(VASCULAR DISEASES PERIPHERAL compl)

I 13390-66

ACC NR: AP6006737

SOURCE CODE: CZ/0082/65/000/004/0264/0266

AUTHOR: Budinova-Smela, J.; Fryntova, A.; Kac1, J.; Marx, F. 2/1
B

ORG: Department of Vascular Diseases of the Brain, Thomayer's Hospital, Prague (Oddeleni pro cervni nemoci mozki Thomayerovy nemocnice); Radiological Clinic, Faculty of General Medicine, Charles University, Prague (Radiologicka klinika fak. vseob. lek. KU)

TITLE: Influence of premedication upon the carotid angiogram

SOURCE: Ceskoslovenska neurologie, ^{no. 4,} no. 4, 1965, 264-266

TOPIC TAGS: drug treatment, brain, blood, circulatory system disease

ABSTRACT: The influence of hypotensive drugs frequently used in premedication upon the cerebral hemodynamics is discussed. 5 cases are analyzed; it is probable that in these cases premedication caused contrast filling of the basilar artery and of its branches during carotid angiography. . .
[JPRS]

SUB CODE: 06 / SUBM DATE: 18Oct64 / ORIG REF: 001 / OTH REF: 010

Card 1/1 FW

FRYNTOVA, A.; MARX, F.

Obliteration of the internal carotid artery in the roentgen picture.
Sborn. lek. 64 no.11:333-339 N '62.

1. Oddeleni pro nahle prihody mozkové Thomayerovy nemocnice v Praze 4,
prednosta doc. dr. J. Budinova-Smela Radiologicka klinika fakulty
vseobecneho lekarstvi University Karlovy v Praze, prednosta prof. dr.
V. Svab.

(CAROTID ARTERY DISEASES) (CEREBRAL EMBOLISM AND THROMBOSIS)
(CEREBRAL ANGIOGRAPHY)

LEHMAN, Hans, prof., dr. ing.; MARX, Gunter, ing.

Investigations on the behavior of the flow of suspensions containing
clay mineral. Epitoanyag 12 no.6:201-208 Je '60.

1. Clausthal (Nemetország) Banyaszati Akademia.

1ST AND 2ND ORDERS PROCESSES AND PROPERTIES INDEX 3RD AND 4TH ORDERS

SA

JULIAS

↓ 5000. On the spin of the photon. G. MARK. A53
Hungar. Acta Phys., 1 (No. 6) 36-42 (1950) *In German.*
 The fact well known in field theories that the spin

component of the photon can have the values ± 1 , but not 0, is here deduced by treating Maxwell's equations with the same method employed for equations describing particles. The spin operator is $-i\hbar r_L$, where $r_A^2 = r_A^2 = -r_L^2$ and $r_A^2 = r_A^2 - r_A^2$. The eigenvalue 0 corresponds to a static field.
 L. PINCHERLE

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS 3RD AND 4TH ORDERS

MARX, G.

Mathematical Reviews
Vol. 14 No. 7
July - August, 1953
Mathematical Physics.

Marx, G. Relativistische Elektrodynamik der Magnete.
Acta Phys. Acad. Sci. Hungar. 2, 67-84 (1952). (Russian
summary)

A theory of the electromagnetic field is developed in which there are permanent magnetic dipoles as well as charged particles. The presence of these magnetic dipoles is taken into account by introducing the additional term $-\frac{1}{2}F_{\alpha\beta}M^{\alpha\beta}$ into the Lagrangian, where $F_{\alpha\beta}$ is the usual anti-symmetric tensor and $M_{\alpha\beta}$ the magnetic moment tensor. The energy-momentum tensor is derived, from which the expression for the force on the magnet is obtained.

C. Kikuchi (East Lansing, Mich.)

Unit, 3.

Marx, G.

"Dilatation oscillations of the atomic nucleus." . 1.

(Acta Physica Academiae Scientiarum Hungaricae. Vol. 3, no. 1, 1951, 344, et.)

SO: Monthly List of East European Acquisitions, Vol. 1, no. 7, Library of Congress, September
1953, incl

MARK, G.

Hungary

DT: 47:1200^a

Roland Eotvos Univ., Budapest

"Interaction of elementary particles and the conservation laws."

Acta Phys. Acad. Sci. Hung. 3, 15-^a (1953) (in German).

MARX, G.

U N G

538.3

6757. The electromagnetic field in moving anisotropic media. G. MARX. *Acta phys. Hungar.*, 3, No. 2, 75-94 (1959) in German.
Field equations are written in covariant form and an expression is obtained for the Lagrange function. Possible forms for the energy-momentum tensor are considered.

R. A. NEWING

MARX, G

Bulletin - Vol. 2, no. 10, 1954.

Relativistic motion in a scalar field. In English. p. 475.

SO: Monthly list of East European Accessions, (EEAL), LC, Vol. 4, No. 9, Sept. 1955
Uncl.

MARKS, G.

"Equations of Motion of a Magnetic Dipole".
Byul. Folsk. AN Otd. 3, 2, No 5, pp 217-222, 1954

The Einstein-Infeld-Hoffman concept of gravitational field is used for deriving equations of motion of a particle having electric and magnetic momenta. Solutions of Maxwell's equations are presented as sum of the external field and the field of the particle: the latter is expanded in series in $1/c$ powers. The coefficients of these series are determined and formulas present the solutions of the equations. (RZhFiz, No 10, 1955)

SO: Sum No. 812, 6 Feb 1956

Mari, G

4

V Mari, G., and Szamosi, G. Relativistic motion in a scalar field. *Bull. Acad. Polon. Sci. Cl. III. 2 (1954), 475-479 (1955).* **I = P/W**

The classical relativistic equations of motion of a particle in a scalar field are investigated. It is found that the rest-mass is in general not constant. In the case of a scalar, attractive, meson field, the rest-mass (but not the total mass or energy) will vanish at some distance from the center of force and the velocity there will be equal to that of light. For smaller distances the effective force on the particle will be repulsive.

N. Rosen (Haifa).

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MARX, G

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HUNG.

1934. The energy impulse tensor of the electric and magnetic field and the corresponding forces in dielectrics. G. MARX AND G. LITMAN. *Acta Phys. Hungar.* 3, No. 1-4, 213-42 (1934) in German.
The calculation of the energy impulse tensor for electromagnetic fields in vacuum using the method of Lorentz forces is well known. The calculations for various fields in dielectric media are discussed here.

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MARX E

POL

538.3

10346. The equation of motion of the magnetic dipole. *G. Marx, Bull. Acad. Polon. Sci. Cl. 3, 2, No. 3, 219-221 (1954)*

The field due to a moving dipole of moment m is obtained as a power series in v/c . The force on the dipole is calculated from considerations of field momentum and expressed in the form $K + (m \cdot v)H + E \times m/c + (v \times m) \times H/c^2$, where E and H are the intensities of the external field. The self-force term K is not discussed in the present note.

RAW

MAR 1967

4

HUNG

330.145-3372

110707. Quantum effects in the interaction between
free electrons and electromagnetic fields. F. S.
HUNG AND G. L. LATHAM. *Ann. Phys. Hungar.* 4
No. 1, 23-31 (1967).

An electron beam shot through a transverse r.f.
field suffers a direction spread. If experimental
conditions are suitably chosen, the direction spread
seems to be due only to the quantum dispersion of
energy exchanges between free electrons and r.f. field.
A simple collector electrode system might allow not
only the detection of the direction spread of the
electrons, but the presence of a quantum effect might
be checked by plotting the collector current versus r.f.
field amplitude, the plot for the quantum effect being
different from those for classical effects.

RAW

Physics - CRT

Category : HUNGARY/Theoretical Physics - Quantum Field Theory

B-6

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 218

Author : Marx, Gyorgy, Szamosi Geza

Title : Motion of a Nucleon in a Scalar Meson Field

Orig Pub : Magyar fiz. folyoirat, 1955, '3, No 2, 141-156

Abstract : General Treatment of the authors' previously-published works. See Referat. Zhur Fizika 1956, 9567, 15766; 1957, 217.

Card : 1/1

MARX, GY.

"Proper momentum of electrons and nuclei in the Dirac theory." p. 291

MAGYAR FIZIKAI FOLYOIRAT. (Magyar Tudományos Akadémia) Budapest, Hungary
Vol. 3, No. 3, 1955.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 6, June 1959.
Uncl.

MARX, G.; NAGY, K.

The energy impulse tensor of radiation in dielectrics. In German. p. 29.
ACTA PHYSICA. Budapest. Vol. 4, no. 3, 1955.

SOURCE: East European Accessions List (EEAL), LV, Vol. 5, No. 2,
February 1956

MARX, G.

NU The surface energy of excited atomic nuclei. G. Marx and G. Sauer (Robert-Rothberg-Inst. für Angew. Phys. Acad. Sci. Hung. 5, 189-90 (1965) (in German))

Born and Courant's method (Z.A. 7, 3262) for the treatment of the surface tension of fluids is applied to a calculation of the surface energy of at. nuclei as a function of temp. The results show that the surface tension of nuclei decreases appreciably with the energy of excitation. It is suggested that this fact should be of importance in the interpretation of nuclear processes.
H. H. Jaft

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RAMC

Handwritten initials and a circled number 1.

Marx, G.

Hungary/Theoretical Physics - Quantum Electrodynamics, B-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 33753

Author: Marx, G.

Institution: Roland-Eotvos-University, Budapest, Hungary

Title: On the Problem of Scattering of Photons by Neutrinos

Original Periodical: Acta phys. Acad. sci. hung., 1955, 5, No 3, 357-358, German

Abstract: The scattering of photons by neutrinos is considered in accordance with the perturbation theory as the decomposition of the neutrino into 2 virtual nucleons and an electron, the scattering of the photon by the virtual electron, and the formation of the final neutrino. The matrix element corresponding to this fourth-order process is proportional to e^2/f^2 , where e is the electron charge, and f is the Fermi interaction constant. The divergence is eliminated by cutting off the virtual particle with respect to the momentum. The cross section is estimated at approximately 10^{-60} cm. A hypothesis is made that along with scattering of light by light, the scattering of light by neutrinos may play a substantial role in astronomical processes.

1 of 1

MARY, GY.

Open discussion about the dissertation by Lajos Keszthelyi, candidate in physics. p. 379. KOZLEMENYEI. Budapest. Vol. 5, no. 3, 1955.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, No. 2, 1956

MARX, GY.

To the memory of Albert Einstein. p. 21. Development of the shipbuilding industry of the German Democratic Republic. p. 23. March 30, 1955, resolution of the board of the Union of the Building, Wood-Using, and Building Materials industries on cooperation between the trade-union and the scientific organizations related to these industries. p. 24.

MUSZAKI ELET, No. 10, May 1955

(Muszaki es Termeszettudomanyos Egyesuletek Szovetsege) Budapest

SOURCE: East European Accessions List Vol. 5, No. 1 September, 1956

MARY, GY.

Composite elements of the atom. p. 453. Atomic technology. p. 458.
TERMESZET ES TARSADALOM. Budapest. Vol. 114, no. 8, Aug. 1955.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, No. 2, Feb. 1956

MARX, G.

"Relativistic Effects in Heavy Nuclei"

Published from Inst. for Theoretical Physics of Univ. of Budapest,
April 1956.

SO: Nuclear Physics, Vol. 1, No. 9, 1956.

MARKS, G

POLAND/Theoretical Physics - Classical Electrodynamics.

B-3

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8400

Author : Marks, G.

Inst : R. Eotvos University, Budapest, Hungary

Title : Variational Principle for Dielectrics.

Orig Pub : Byul. Pol'sk, L V. Otd. III, 1956, 4, No 1, 29-35

Abstract : The author considers the variational principle of the electrodynamics of dielectrics. The first portion is devoted to the derivation of the equations of motion and the energy-momentum tensor in relativistic hydrodynamics of an ideal liquid. If one employs as the Lagrangian the simplest invariant, it is possible to obtain in the usual manner the known equations of motion; these equations can be represented in the form analogous to that given by Verlet (Referat Zhur Fizika, 1954, 11077) for the equations of motion in the scalar meson field. In the second portion the above arguments are general-
zed

Card 1/2

POLAND/Theoretical Physics -- Classical Electrodynamics.

B-3

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8400

to include a dielectric liquid, having a certain space charge. By supplementing the Lagrangian invariance connected with the electrodynamic field, we obtain the energy-momentum tensor as a result of applying the variational method. This tensor is a covariant generalization of the Abraham tensor. The resultant tensor is examined in greater detail for the case of incompressible liquid; it is the sum of the tensor of a moving ideal liquid and the Einstein-Laub tensor for a dielectric at rest. Considering that the density of the dielectric medium is increased by the polarization energy, the author finds that the resultant expression is the sum of the tensor of the moving ideal liquid and the tensor obtained by Kluitenberg (Kluitenberg, G.A., Thesis, Rotterdam, 1954) by a thermodynamic consideration. Thus, the Abraham, Einstein-Laub, and Kluitenberg tensors are particular cases of the tensor obtained by the author.

Card 2/2

MARKS, G.

Category : POLAND/Theoretical Physics - Classical Electrodynamics B-3

Abstr Jour : Ref Zhur - Fizika, No 3, 1957, No 5644

Author : Marks, G., Nad', K.

Inst : Roland Eotvos University, Budapest, Hungary.

Title : Concerning the Transfer of Momentum by Continuous Electromagnetic Waves in Dielectric Media.

Orig Pub : Byul. Pol'skoy AN, 1956, Otd. 3, 4, No 2, 75-77

Abstract : An analysis is given of the derivation obtained by Rubinovich (Referat Zhur Fizika, 1956, 21772), on the basis of an investigation of Abraham's energy-momentum tensor, concerning the transfer of momentum to a dielectric by the moving surfaces of the discontinuity of the electromagnetic field intensity. The discontinuity $\Delta \underline{E}$ creates in the dielectric an increment in polarization, i.e., a motion of charges. The corresponding density of polarization current is $\int (\epsilon - 1)/4\pi v \cdot \Delta \underline{E}$, where v is the speed of wave propagation in the dielectric. In this case the medium should be acted upon at the point of discontinuity, by the same force as is produced in the case of the conduc-

Card : 1/2

max, G.

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1427 THE PROBLEM OF PULSE TRANSMISSION BY DISCONTIN-
UOUS ELECTROMAGNETIC WAVES IN DIELECTRIC MEDIA

621.372.21 : 538.569.2

G. Mark and J. Nęcki
Ann. Acad. Polon. Sci. Phys., Vol. 14, No. 2, 1962, 115-116, in
Gorkon

Rubinowicz (Abstr. 43264/1962, Acta Phys. Polon., Vol. 13,
No. 3, 225-31, 1962) has given an expression for a field impulse de-
duced from the integral form of the conservation law, in the case
where the surface current and surface charges vanish and the sur-
face of discontinuity is perpendicular to the velocity of light. Then
the associated electric and magnetic field strengths in a
homogeneous medium have an impulsive form. The source of this
phenomenon is not understood and the present paper examines the
case of media with both conduction and elastically-bound electrons.
It is concluded that the results of Rubinowicz are consistent with
the conditions in the media.

B.C. Dum

SA

my

MARX, GYÖRGY

Distr: 4536

Marx, György; and Román, Pál. Energy and momentum in the general theory of fields. Magyar Tud. Akad. Mat. Fiz. Oszt. Közl. 6 (1956), 269-287. (Hungarian)

This paper contains an exposition of the different methods one can use to generate the energy-momentum tensor in field theories. These methods are based on the invariance of the Lagrangian under certain variations. 1) Hilbert's method: The invariance of the Lagrangian with respect to variations of the metric tensor gives the (symmetric) energy-momentum tensor; 2) Belinfante's method: The invariance of the Lagrangian with respect to variations which correspond to infinitesimal inhomogeneous Lorentz transformations enables us to construct a nonsymmetric canonical energy-momentum tensor which can be symmetrized, giving the energy-momentum tensor. The authors then show that the two methods generate the same energy-momentum tensor, if the system is closed (i.e., if the divergence of the energy-momentum tensor is zero); if the system is open, only method 1) can be used. Large numbers of applications are given; the authors construct the energy-momentum tensor for scalar fields, pseudo-scalar fields, spinor fields and Maxwell-fields, without and with sources.

N. L. Balazs (Chicago, Ill.)

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AM. Y.; ...

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p. 123 Magyar ...

36; Monthly Index of ...

MARX, G.

12164
SYMMETRY OPERATIONS OF THE HILBERT SPACE AND
SELECTION RULES CONCERNING THE INTERACTIONS
OF BARYONS AND MESONS. G. MARX (Polish Academy
of Sciences) and G. GIARDINO (Research Inst. for
Physics, Bologna). Nuovo cimento (19) 5, Suppl. No. 1,
189-217 (1967).
Some applications of charge conjugation and symmetry
properties in isotopic spaces are presented in connection
with the production of Σ -mesons and hyperons, and with the
annihilation of antinucleons and antihyperons. (M.H.R.)

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MARX Gyorgy
HUNGARY/Theoretical Physics - Relativity. Unified Field Theory

B-2

Abs Jour : Ref Zhur - Fizika, No 4, 1958, No 7564

Author : Marx Gyorgy

Inst : Not Given

Title : Relativistic Hydrodynamics

Orig Pub : Magyar fiz. folyoirat, 1957, 5, No 2, 91-104

Abstract : The author gives the fundamentals of relativistic hydrodynamics, following from the variational principle. The problem of the propagation of elastic waves is considered; the laws of motion of a charged liquid are derived. The conclusions obtained are applied to the case of motion of an electron beam.

Card : 1/1

MAX GYORGY
HUNGARY/Atomic and Molecular Physics - Liquids

D-8

Abs Jour : Ref Zhur - Fizika, No 4, 1958, No 8102

Author : ~~Max~~ Gyorgy, Szamosi Geza

Inst : Eotvos Lorand Tudományegyetem Emeleti Fiz. Intezete, Budapest,
Hungary

Title : Theoretical Relations of the Eotvos Law

Orig Pub : Magyar fiz. folyoirat, 1957, 5, No 3, 123-135

Abstract : An article of survey character. The authors, following Born and Courant (Born M., Courant R., Physik Z., 1913, 14, 731) derived the Eotvos law of surface tension on the basis of principles of thermodynamics with the use of the Planck quantum hypothesis. It turns out that in the formation of surface tension, a great role is played by the so-called capillary waves which have a quantum character. The application of the law to nuclear phenomena gives a correct order of the energy of evaporation of the nucleus (corresponding to a case where the surface tension equals to zero).

Card : 1/1

Distr: $\mu E3c/\mu E3d$

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15. Selectivity rules in the single-K-meson theory.
Gy. Marx. *A Magyar Tudományos Akadémia Köz-
ponti Fizikai Kutató Intézetének Közleményei* (Proceed-
ings of the Central Research Institute for Physics of
the Hungarian Academy of Sciences). Vol. 5, 1957, No.
3, pp. 301-304

19

Selectivity rules for the radioactive decay of a
nucleon-antinucleon pair into K mesons as well as of
K⁰ mesons into π mesons have been determined. The
radioactive decay of a nucleon-antinucleon pair may be
suitable for deciding whether only a single type of K
meson exists or whether this particle forms a K meson
parity doublet.

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MARX, Gy.

Distr: 4A1c/4E3c/4E3d

13 The theorem of the conservation of the fermion number and the principle of the minimum number of states in the theory of the neutrino. G. Y. MARX. *Magyar Tudományos Akadémia Központi Fizikai Kutató Intézetének Közleményei (Proceedings of the Central Research Institute for Physics of the Hungarian Academy of Sciences)*, Vol. 5, 1957, No. 3, pp. 305-313, 4 figs.

52

Two simplifying principles may be introduced concerning the neutrino, the theorem of the conservation of the fermion number and the minimum condition for the number of the possible states of elementary particles. Among the "classical" neutrino theories the first has been accepted by the Fermi theory, the second being adopted by the Majorana theory. After dispensing with the law of the conservation of parity both principles may be applied simultaneously as can be seen from the Landau theory. The possibility of applying both principles for the decay of μ mesons and other particles is investigated.

LB
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Rmk

HUNGARY/Theoretical Physics - Classical Electrodynamics. Classical B-2
Field Theory

Abs Jour : Ref Zhur - Fizika, No 8, 1958, No 17245

Author : ~~Mary Gyogy~~, Szanoszi Geza

Inst : Not Given

Title : General Forms of Motion of a Point Mass in Relativistic
Dynamics

Orig Pub : Magyar fiz. folyoirat, 1957, 5, No 5, 431-448

Abstract : The article is devoted to a study of the motion of an arbitrary
point mass in space and time under the influence of forces of
general type.

Card : 1/1

HUNGARY/Theoretical Physics - Classical Electrodynamics. Classical B-3
Theory of Fields

Abs Jour : Ref Zhur - Fizike, No 10, 1958, No 22064

Author : Szamosi Geza, Marx Gyorgy
Ins. : Not Given
Title : Variational Principles in Relativistic Dynamics

Orig Pub : Magyar fiz. folyoirat, 1957, 5, No 6, 511-522

Abstract : See Reforet Zhur Fizike, 1957, 8, 18909; No 12, 29539.

Cerd : 1/1

MARY G.

Max. G. Innere Arbeit in der relativistischen Dynamik.
Acta Phys. Acad. Sci. Hungar. 6 (1957), 353-375.
(Russian summary)

The aim of this paper is the relativistic investigation of the types of forces different and more general than the Lorentz force. The starting points are the usual four dimensional laws of mechanics. It is shown that the action of such a general force changes the energy of the particle in two ways: either by changing its kinetic energy or by changing its rest mass. This latter effect is carefully analyzed.

L. Infeld (Warsaw)

I. F. W.