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AUTHOR: Moshcheryakov, Yu. I.

ORG: none

TITLE: Estimate of susceptibility of a four-level, saturated, paramagnetic system with a step-wise pumping mode

SOURCE: *Fizika tverdykh tela*, v. 8, no. 3, 1988, 2430-2434

TOPIC TAGS: magnetic susceptibility, signal frequency, pumping frequency, weak magnetic field

ABSTRACT: Amplification by a four-level, step-wise excited paramagnetic system has the advantage of requiring a weak magnetic field to split the levels in the centimeter range and the signal and pumping frequencies can be almost identical, especially in the millimeter range. The magnetic susceptibility of such a system is studied and compared with a four-level system operating in a coincidence pumping mode. The motion equations for the density matrix are used to obtain an expression for the magnetic susceptibility of a four-level, saturated, paramagnetic system in a step-wise pumping mode. Amplification in such a system coincides with amplification in Bloembergen's three-level system (*Phys. Ref.*, 104, 324, 1956). It is shown that susceptibility of a step-wise four-level system is no worse in the coincidence mode and is much better than

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the susceptibility of a three-level system. The author thanks K. I. Krylov and V. V. Maslennikova for reading the paper and for valuable comments. Orig. art. has: 1 figure, 9 formulas.

SUB CODE: 20/

SUBM DATE: 15Sep65/

ORIG REF: 003/

OTH REF: 004

Card 2/2

MESHCHERYAKOVA, A.A.

Aerosol immunization method in swine erysipelas. Veterinarlia 35
no.10:44-45 O '58. (MIRA 11:10)
(Erysipeloid)

VOTINTSEV, K.K.; MESHCHERYAKOVA, A.I.

Chemical composition of ice on Lake Baikal. Dokl. AN SSSR 136 no.5:
1205-1208 F '61. (MIRA 14:5)

1. Baykal'skaya limnologicheskaya stantsiya Vostochno-Sibirskogo
filiala Sibirskogo otdeleniya AN SSSR. Predstavleno akad. D.V.
Nalivkinym.

(Baikal, Lake—Ice—Composition)

VOTINTSEV, K.K.: MESHCHERYAKOVA, A.I.

Role of wind transportation in the formation of bottom deposits and
chemical composition of water in Lake Baikal. Dokl. AN SSSR 141
no.6:1426-1428 D '61. (MIRA 14:12)

1. Limnologicheskiy institut Sibirskogo otdeleniya AN SSSR.
Predstavleno akademikom D.V. Nalivkinym.
(Baikal, Lake--Sedimentation and deposition)

VOTINTSEV, K.K.; VERDEKVA, N.V., MESHCHERYAKOV, A.I.

Horizontal distribution of some components in the upper water
layer of Lake Baikal. Trudy lim. inst. 31:9-112 '51. (MIRA 17:4)

AFANAS'YEVA, E.L.; VERBOLOV, V.I.; VOTINTSEV, K.K.; KROTOVA, V.A.;
MAN'KOVSKIY, V.I.; MESHCHERYAKOVA, A.I.; SHIMARAYEV, M.N.

Comprehensive synchronous limnological studies of Baikal waters.
Izv. AN SSSR. Ser. geog. no. 2:120-125 Mr-Ap '64. (MIRA 17:5)

1. Limnologicheskiy institut Sibirskogo otdeleniya AN SSSR.

USSR/Human and Animal Morphology. Nervous System.
Peripheral Nervous System

S-3

Abstr Jour: Ref Zhur - Biol., No 19, 1958, 88409

Author : Meshcheryakova, A. M.; Korotkov, A. G.

Inst : Kazan Medical Institute

Title : On the Morphology of the Posterior Spinal Roots

Orig Pub: Sb. nauchn. rabot. Kazansk. med.-int, 1957, vyp.
4, 35-41

Abstract: In 20 cats and dogs, 2-3 pairs of the posterior spinal roots (PSR) were sectioned proximally through their ganglia, extra- and intradurally, in the thoracic and lumbar areas. The anterior roots, the PSR, the peripheral sympathetic trunk, the splanchnic nerves and the solar plexus were investigated, following the method of Bil'shovskiy-Gross. It is the opinion of the authors that there are no parasympathetic fibres in the structure of PSR, and

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MESHCHERYAKOVA, A.V.

USSR

Phosphacol as a miotic drug and as a reducer of intra-ocular pressure. A. V. Meshcheryakova (Helmholtz State Sci. Research Inst. Eye Diseases, Moscow). *Trudy Vsesoyuz. Obshchestva Fiziolov, Biokhimitov i Farmakologov, Akad. Nauk S.S.S.R.* 2, 189-93 (1954).—The study was prompted by the hope to find effective drugs for the therapy of glaucomas. In 1/5000 diln. phosphacol was found to be a potent miotic drug. However, some patients suffered from headaches, even though the administration of the drug resulted in reduced intraocular pressure. Pilocarpine stimulated the formation of acetylcholine; phosphacol inactivated the cholinesterase and prevented the breakdown of acetylcholine. The simultaneous administration of pilocarpine and phosphacol is regarded with favor. B.S. Levine

State Sec. Res. Inst. Just. Eye Diseases in Gdansk

U.S.S.R. / Human and Animal Physiology. Nervous Sys- T
tem.

Abs Jour: Ref Zhur-Biol., No 5, 1958, 22648.

Author : Meshcheryakova, A. V., Yansinovskaya, F. I.
Inst : Not given.
Title : Electrical Activity of the Cerebral Cortex in
Angina Pectoris.

Orig Pub: nauchn. raboty aspirantov i klinich ordinatorov-
Centr. in-t usoversh. vrachey, 1957, vyp. 4,
32-42.

Abstract: With the onset of angina the authors observed in
the EEG of the patients either rapid, frequent
and at times (Spikelike) waves or replacement of
the alpha rhythm by slow oscillations. Concur-
rently, the EKG showed changes characteristic of
myocardial ischemia. The EEG changes sometime
preceded the EKG changes.

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MESHCHERYAKOVA, A.V.; SLUTSKIY, M.Ye.; KROBY, A.M., M.K.G., S.P.S.

Euphyllin in the treatment of coronary insufficiency. Terap.arkh.
29 no.11:14-23 II '57. (MIRA 11:2)

1. Iz kafedry 1-y terapii (zav. - deystvitel'nyy chlen AMN SSSR
zasluzhennyy deyatel' nauki prof. M.S.Vovsi) , kafedry 2-y terapii
(zav. - prof. B.Ye.Votchal) i kafedry 3-y terapii (zav. - zasluzhennyy
deyatel' nauki prof. I.A.Kassirskiy) Tsentral'nogo instituta usovershen-
stvovaniya vrachey.

(CORONARY DISEASE, therapy,
aminophylline (Rus))
(AMINOPHYLLINE, therapeutic use,
coronary dis. (Rus))