LITVIN, V.M.

Origin of the bottom relief of the Norwegian Sea. Okeanologiia 5
no.4:692-700 '65.
(MIRA 18:9)

L 05078-67

ACC NR: AP6013316   (N)   SOURCE CODE: UR/0413/66/000/008/0136/0136

AUTHORS: Golen', S. I.; Litvin, V. P.; Lutskiy, V. I.; Makarevich, Ya. N.; Shne, F.B.

7

ORG: none   /3

TITLE: A cargo-handling mast. Class 65, No. 180969

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 136

TOPIC TAGS: ship component, cargo handling equipment

ABSTRACT: This Author Certificate presents a cargo-handling mast on maritime ships.
The mast is equipped with a crane arm, a rotating head mounted on the top of the mast,
and a device for shifting the crane arm from one working position to the other
diametrically located working position. The design permits the crane arm to be
shifted without altering its rigging. The device is made in the form of two rotating
brackets with yokes and with an intermediate pivot (see Fig. 1). The yokes are
fastened to the lower part of the mast.

UDC: 629.12.014.21
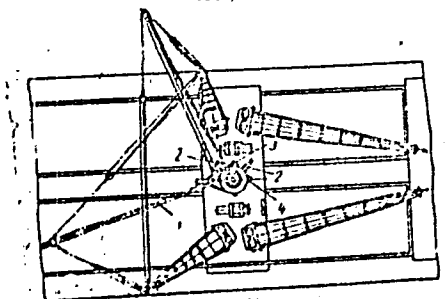
Card 1/2

L 05073-67

ACC NR: AP6013316

Fig. 1. 1 - crane arm; 2 - brackets;
3 - intermediate pivot; 4 - pivot

Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 15Apr61

Card 2/2 fv

LITVIN, V.N.

Influence of the Veliko-Anadol' Forest on precipitation.
Trudy UkrNIGMI no.39:126-133 '63.   (MIRA 16:7)

(Veliko-Aradol' region--Forest influences)
(Precipitation)

LITVIN, V.N.

Studying the mutual effect of elbows and branch pipes. Prom.
vent no.9:135-139 '60. (MIRA 16:11)

LITVIN, V.N.

Microclimate of the drained bottomland of the Trubezh River and the
growing of some agricultural crops. Trudy UkrNIGMI no.45:97-111 '64
(MIRA 17:10)

GINZBURG, D.M.; PIKULINA, N.S.; LITVIN, V.P.

Systen NH_3 - P_2S - H_2O. Zhur.prikl.khim. 38 no.9:2117-2119
S '65.   (MIRA 18:11)

1. Nauchno-issledovatel'skiy institut osnovnoy khimii,
Khar'kov.

GINZBURG, D.M.; PIKULINA, N.S.; LITVIN, V.P.

Density of potassium carbonate solutions. Zhur. prikl. khim.
37 no.11:2553-2357 N '64   (MIRA 18:1)

1. Nauchno-issledovatel'skiy institut osnovnoy khimii, Khar'kov.

GINZBURG, D.M.; PIKULINA, N.S.; LITVIN, V.P.

Density of sodium carbonate solutions. Zhur. prikl. khim. 37
no.12:2749-2750 D '64.   (MIRA 18:3)

1. Nauchno-issledovatel'skiy institut osnovnoy khimii, Khar'kov.

LITVIN, Ye.F.

VERESHCHAGIN, L.F.; SNEGOVA, A.D.; LITVIN, Ye.F.

Effect of high pressure on the function of molecular weight
distribution of polystyrene. Dokl.AN SSSR 95 no.3:563-565 Mr '54.
(MLRA 7:3)

1. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk
SSSR. 2. Moskovskiy gosudarstvennyy universitet im. M.V.Lomo-
nosova. Predstavleno akademikom A.N.Frumkinym.
(Molecular weights) (Polystyrene)

5.3400

80093
S/020/60/131/06/37/071
B011/B005

AUTHORS: Freydlin, L. Kh., Litvin, Ye. F., Ditsent, V. Ye.

TITLE: Investigation of the Influence of Composition of Mixed Solvents
               on the Rate and Selectivity of the Process of Hydrogenation of
               2-Ethylanthraquinone

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 6, pp. 1362 - 1365

TEXT: The authors found that the rate and selectivity of the process mentioned
in the title are essentially influenced by the composition of the mixed solvent.
Hydrogenation of the 2-ethylanthraquinone ring is favored by dioxane. At 20° and
normal pressure, one of its two aromatic rings hydrogenates in the dioxane medium.
The authors could not find an octahydro derivative. The formation of the tetra-
hydro derivative starts immediately at the beginning of the process. By addition
of a polar component to dioxane, the reduction of quinone groups is accelerated,
whereas the hydrogenation of the quinone ring is suppressed. On addition of even
small amounts of N,N-dimethyl formamide (0.3%) to dioxane, 2-ethylanthraquinone
is selectively hydrogenated. A higher selectivity of the process is apparently
achieved by acceleration of the hydrogenation of the quinone group and by

Card 1/3

80093

Investigation of the Influence of Composition of Mixed   S/020/60/131/06/37/071
Solvents on the Rate and Selectivity of the Process of   B011/B005
Hydrogenation of 2-Ethylanthraquinone

adsorptive substitution of the hydroquinone molecules. The degree of selectivity
depends on the nature and quantity of the polar solvent added. In their experi-
ments, the authors used the following solvent mixtures: dioxane-N,N-dimethyl
formamide and dioxane ethanol. The catalyst was produced by treating a Ni — Al
alloy (50:50) with alkali. The reaction rate was determined by measuring the ab-
sorption rate of hydrogen. The quinones were determined after oxidation of the
catalyzate by means of air with automatic photopolarographs of the type LP-55
(Methods, Ref. 4). Preliminary experiments showed that the reaction rate does
not depend on the intensity of stirring. The reaction order in dimethyl forma-
mide was equal to zero (Fig. 1). Fig. 1 shows the dependence of the hydrogena-
tion rate of 2-ethylanthraquinone on its concentration in dimethyl formamide.
Fig. 2 shows the dependence of the absorption rate of the first mole of hydrogen
on the composition of the binary solvent. Table 1 shows that the reaction pro-
ceeds least selectively in dioxane. Already under smooth experimental conditions
(20°, normal pressure), 2-ethyltetrahydroanthrahydroquinone begins to form. On
hydrogenation in 90% of dioxane and 10% of ethanol (or equal volumes of dioxane
and ethanol), no tetrahydroquinone was detected even after absorption of
0.95 mole of hydrogen. There are 2 figures, 1 table, and 4 references, 3 of which

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Investigation of the Influence of Composition of Mixed   S/020/60/131/06/37/071
Solvents on the Rate and Selectivity of the Process of   B011/B005
Hydrogenation of 2-Ethylanthraquinone

80093

are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
               nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy
               of the Academy of Sciences, USSR)

PRESENTED: November 23, 1959, by A. A. Balandin, Academician

SUBMITTED: November 12, 1959

Card 3/3

25046
S/062/61/000/006/008/010
B118/B220

S.3300

AUTHORS: Freydlin, L. Kh., Nazarova, N. M., and Litvin, Ye. F.

TITLE: Thermal alkylation of cyclopentane with olefins

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh
              nauk, no. 6, 1961, 1146-1148

TEXT: Up to the present time, the alkylation of cycloparaffin hydro-
carbons has hardly been studied. H. Pines and N. Ipatieff (see below)
studied the alkylation of methyl cyclopentane with olefins in the presence
of H_2SO_4 (100 %) or HF. The reaction proved to be very complicated.
Yu. G. Mamedaliyev and A. Kuliyev (Dokl. AN SSSR, 88, 471 (1953)) as well
as Yu. G. Mamedaliyev and Z. A. Mamedova (ibid., 112, 1063, (1957))
alkylated methyl, ethyl, and isopropyl cyclohexane with propylene and
butylene under similar conditions. In the present study, the direct
alkylation of cyclopentane with ethylene and propylene at elevated
temperatures and under pressure was achieved for the first time. The
main reaction products were isolated and identified. The influence of

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Thermal alkylation of cyclopentane...

25046
S/062/61/000/006/008/010
B118/B220

temperature and pressure on the course of reaction was studied. The
alkylation with ethylene proceeds already at a temperature of 350°C and
under a pressure of 200 atm. At elevated temperatures and pressures, the
yield in alkylates and the degree of conversion increase. At 450°C, the
ethylene was completely consumed. Diagram 1 shows the chromatogram of
one of the catalyzates with carbons up to C_9, and also its distillation
curve. The main reaction products were ethyl cyclopentane (peak III),
the diethyl cyclopentanes (peaks IV and V), and butyl cyclopentane
(peak VI). A horizontal section on the distillation curve corresponds
to each of these peaks. After elimination of the cyclopentane from the
alkylate by fractional distillation, the following fractions were obtained:
I) monoethyl cyclopentane and II) diethyl cyclopentane. The unsaturated
character of the alkylate is not strongly marked. The yield in ethyl
cyclopentanes amounts to 36 % (related to the weight of the alkylate) and
to 65 % (related to the weight of the large fraction). Alkylation with
propylene is more difficult. On distillation under pressures between 200
and 450 atm, easily boiling cracking products, the fraction of propyl
cyclopentane, and the higher boiling residue were separated from the
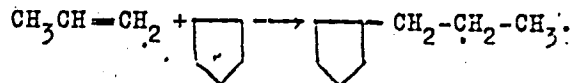
Card 2/5

25046
S/062/61/000/006/008/010
Thermal alkylation of cyclopentane... B118/B220

alkylates. Cyclopentane reacts with propylene like cyclohexane according
to the equation:

$$CH_3CH = CH_2 + \underset{}{\bigcirc} \longrightarrow \underset{}{\bigcirc} CH_2-CH_2-CH_3.$$

On thermal alkylation, the cyclopentane adds to the outer unsaturated
C-atom of the propylene. There are 2 figures, 1 table, and 6 references:
5 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language
publication reads as follows: H. Pines, N. Ipatieff, J. Amer. Chem. Soc.
67. 1631 (1945).

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR (Institute of Organic Chemistry imeni
N. D. Zelinskiy USSR)

SUBMITTED: November 11, 1960

Card 3/5

FREYDLIN, L.Kh.; LITVIN, Ye.F.

Selectivity of 2-ethylanthraquinone hydrogenation on a nickel
catalyst. Izv.AN SSSR,Otd.khim.nauk no.6:1150-1151 Je '61.
(MIRA 14:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Anthraquinone) (Hydrogenation)

BALANDIN, A.A.; KLABUNOVSKIY, Ye.I.; LITVIN, Ye.F.

Composition of butenes formed in the catalytic dehydration of 2-butanol. Izv.AN SSSR.Otd.khim.nauk no.10:1863-1870 O '61.
(MIRA 14:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Butene) (Butanol)

FREYDLIN, L.Kh.; LITVIN, Ye.F.; SHUKOVA, I.F.; ENGLIN, B.A.

Effect of the nature of solvent and the amount of Raney
nickel catalyst on the orientation of hydrogen addition to
trans-piperylene. Neftekhimiia 1 no.4:484-488 J1-Ag '61.
                                                (MIRA 16:11)
1. Institut organicheskoy khimii AN SSSR imeni N.D.
Zelinskogo.

FREYDLIN, L.Kh.; SHARF, V.Z.; LITVIN, Ye.F.; TUKHTAMURADOV, Z.T.

Dehydration of primary n-amyl alcohol and the accompanying isomeric conversions of pentenes on a calcium phosphate catalyst. Neftekhimiia 1 no.4:548-554 Jl-Ag '61.
(MIRA 16:11)

1. Institut organicheskoy khimii AN SSSR imeni N.D. Zelinskogo.

33584
S/204/61/001/005/002/008
E075/E484

11.0132.

AUTHORS: Nazarova, N.M., Freydlin, L.Kh, Shafran, R.N.,
Litvin, Ye.F.

TITLE: Thermal alkylation of methylcyclohexane with olefins
under pressure

PERIODICAL: Neftekhimiya, v.1, no.5, 1961, 613-618

TEXT: The authors reported recently that alkylation of cyclo-
hexane and cyclopentane can be achieved thermally (350 to 450°C)
under pressure (50 to 200 atm).   Further work on alkylation of
methylcyclohexane with olefins was carried out to elucidate the
influence of side chains on the direction and ease with which the
reaction proceeds.   The reaction was carried out in a reactor
filled with quartz rings.   Molar ratios of methylcyclohexane to
ethylene were from 2.5 to 3.6 and for propylene 1.4 to 3.2.   The
space velocity varied between 0.81 and 0.99 litre/hour for
ethylene and 0.52 to 1.43 litre/hour for propylene.   All
experiments with propylene were carried out at 450°C, whereas for
ethylene the temperatures varied from 350 to 450°C.   Results show
that the main product of the reaction of methylcyclohexane with

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S/204/61/001/005/002/008
E075/E484

Thermal alkylation ...

ethylene is a mixture of methylethylcyclohexanes, the proportions
of various isomers differing from their equilibrium concentrations.
With propylene the reaction proceeds with more difficulty and the
yield of alkylate is lower than that obtained for ethylene
(155% of propylene taken and 316% of ethylene respectively).
Comparison with previous work (Ref.7: N.M.Nazarova, L.Kh.Freydlin.
Dokl. AN SSSR, 137, 1961, 1125) shows that the alkylation of methyl-
cyclohexane proceeds more easily than that of unsubstituted cyclo-
hexane. The reaction begins at a lower temperature (350°C) and
pressure (50 atm). The expected formation during the reaction of
1-methyl-1-ethylcyclohexane was not observed, which is explained
by thermal instability of hydrocarbons with quaternary carbon atoms.
It is postulated that 1,3 and 1,4-isomers are formed by an internal
rearrangement of 1,1-isomer or via an intermediate stage of
migration of free valency of methylcyclohexyl radical from
position 1,1 to positions 1,3 and 1,4. Acknowledgments are
expressed to A.L.Liberman and T.V.Vasina for supplying the
methylethylcyclohexane samples. Yu.G.Mamedaliyev, Aladdin Kuliyev
and Z.A.Mamedova are mentioned in the article in connection with

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S/204/61/001/005/002/008

E075/E484

Thermal alkylation ...

their contributions in this field.   There are 2 figures, 5 tables and 11 references: 6 Soviet-bloc and 5 non-Soviet-bloc.   The four references to English language publications read as follows:

Ref.2: V.J.Komarowsky.   J. Amer. Chem. Soc., no.59, 1937, 2715;

Ref.3: H.Pines, W.Ipatieff.   J. Amer. Chem. Soc., v.67, 1945, 1631;

Ref.4: A.Schneider.   J. Amer. Chem. Soc., v.76, 1954, 4938;

Ref.9: H.D.Orloff.   Chem. Rev., no.54, 1954, 347.

ASSOCIATION: Institut organicheskoy khimii AN SSSR im. N.D.Zelinskogo (Institute of Organic Chemistry AS USSR imeni N.D.Zelinskiy)

SUBMITTED: August 7, 1961

Card 3/3

FREYDLIN, L.Kh.; LITVIN, Ye.F.; KAUP, Yu.Yu.

Sequence of reactions in the hydrogenation of 2,3-dimethyl-
1,3-butadiene on a skeletal nickel catalyst. Dokl. AN SSSR
139 no.6:1386-1388 Ag '61.   (MIRA 14:8)

FEYDLIN, L.Kh.; SHARF, V.Z.; TUKHTAMURADOV, Z.T.; LITVIN, Ye.F.

Dehydration of primary n.amyl alcohol and isomerization of 1-pentene on aluminosilicate catalysts. Kin.i kat. 3 no.1:114-117 '62.
(MIRA 15:3)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Amyl alcohol) (Pentene) (Aluminosilicates)

FREYDLIN, L.Kh.; LITVIN, Ye.F.; ZHUKOVA, I.F.; Prinimal uchastiye
        KRYLOVA, L.M.

        Investigation of hydrogenation reactions of piperylene stereoiso-
        mers on a skeletal nickel catalyst. Neftekhimiia 1 no.2:213-217
        Mr-Ap '61.   (MIRA 15:2)

        1. Institut organicheskoy khimii AN SSSR im. N.D. Zelinskogo.
                   (Piperylene)   (Hydrogenation)
                        .(Catalysts, Nickel)

AKIMOV, V.M.; LITVIN, Ye.F.; RUBINSHTEYN, A.M.; FREYDLIN, L.Kh.

Phase transitions during the preparation of Ni-MgO catalysts
by the decomposition of oxalates in a hydrogen stream. Izv.AN
SSSR.Otd.khim.nauk no.10:1892-1894 O '61.   (MIRA 14:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
            (Nickel oxalate) (Magnesium oxide)

FREYDLIN, L.Kh.; KAUP, Yu.Yu.; LITVIN, Ye.F.

Processes of hydrogenation and isomerization of n. hexenes
in the presence of a skeletal nickel catalyst. Izv.AN SSSR.Otd.
khim.nauk no.8.1464-1467 Ag '62.   (MIRA 15:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
      (Hexene)   (Hydrogenation)   (Nickel catalysts)

GONIKBERG, M.G.; PROKHOROVA. N.I.; LITVIN, Ye.F.

Effect of high pressure on the steric orientation of homolytic
aromatic substitution. Izv.AN SSSR.Otd.khim.nauk no.8:1495
Ag '62.   (MIRA 15:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
   (Aromatic compounds)   (Substitution (Chemistry))

LITVINOVA, E.M.; LITVIN, Ye.F., otv. red.; SUSHKOVA, L.A., tekhn. red.;
      SIMKINA, G., tekhn. red.

      [Gas chromatography; bibliographic index to Soviet and foreign
      literature for 1952-1960]Gazovaia khromatografiia; bibliogra-
      ficheskii ukazatel' otechestvennoi i zarubezhnoi literatury,
      1952-1960 gg. Mockva, Izd-vo Akad. nauk SSSR, 1962. 282 p.
                                                    (MIRA 15:11)
      1. Akademiya nauk SSSR. Institut organicheskoy khimii.
                  (Bibliography—Gas chromatography)

FREYDLIN, L.Kh.; ZHUKOVA, I.F.; LITVIN, Ye.F.; ANDERSON, A.A.

Mechanism of the hydrogenation of isoprene and its binary mixtures
with isoamylene. Neftekhimiia '2 no.5:670-675 S-O '62.

(MIRA 16:1)

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo.
(Isoprene) (Butene) (Hydrogenation)

FREYDLIN, L.Kh.; KAUP, Yu.Yu.; LITVIN, Ye.F.; ILOMETS, T.I.

Selectivity and stereospecificity in reactions of n-hexene
hydrogenation on a skeletal nickel catalyst. Dokl. AN SSSR
143 no.4:883-386 Ap '62.   (MIRA 15:3)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
Predstavleno akademikom A.A.Balandinym.
          (Hexene) (Hydrogenation) (Catalysts, Nickel)

S/204/63/003/001/002/013
E075/E436

AUTHORS: Freydlin, L. Kh., Sharf, V.Z., Litvin, Ye.F.,
            Tukhtamuradov, Z.T.

TITLE: Preparation of C8 - C12 α-olefins by the catalytic
            dehydration of primary alcohols

PERIODICAL: Neftekhimiya, v.3, no.1, 1963, 10-12

TEXT: The authors investigated the catalytic dehydration of C8,
C10 and C12 n-alcohols after previous successful preparation of
98% pure α-olefins from n - C4 - C6 alcohols using trisubstituted
calcium phosphate as catalyst (Neftekhimiya, v.1, no.6, 1961, 749).
The catalyst was prepared by treating the phosphate with 0.07 g
NaOH / g catalyst and baking at 400 to 450°C for 1 to 2 hours.
It preserved its activity without regeneration.   The products of
the dehydration were 92 to 94% pure α-olefins (97 to 98% after
distillation) obtained with the yields of 58 to 88%.   The purity
of the alcohols is of the same order as that obtained after the
pyrolysis of the acetates and is much better than that of the
alcohols produced with alumina as the dehydration catalyst.   In
the latter case the products contain only 39 to 68% α-olefins and

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S/204/63/003/001/002/013
E075/E436

Preparation of $C_8 - C_{12}$ ...

the remainder - isomers with the double bond in different positions.
There are 2 figures and 1 table.

ASSOCIATION: Institut organicheskoy khimii AN SSSR im.
H.D.Zelinskogo (Institute of Organic Chemistry AS USSR
imeni N.D.Zelinskiy)

SUBMITTED: July 26, 1962

Card 2/2

FREYDLIN, L.Kh.; LITVIN, Ye.F.

Hydrogenation of stereoisomers of piperylene on metallic catalysts.
Neftekhimiia 3 no.3:326-329 My-Je '63.   (MIRA 16:9)

1. Institut organicheskoy khimii AN SSSR imeni Zelinskogo.
(Hydrogenation) (Piperylene) (Catalysts)

FREYDLIN, L.Kh.; LITVIN, Ye.F.; ZHUKOVA, I.F.; ENGLIN, B.A.

Sequence of reactions in the process of hydrogenation of piperylene
on a skeletal nickel catalyst. Kin.i kat. 4 no.1:128-133 Ja-F '63.
(MIRA 16:3)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
   (Piperylene)   (Hydrogenation)   (Nickel catalysts)

FREYDLIN, L.Kh.; LITVIN, Ye.F.

Hydrogenation of diene hydrocarbons on a liquid phase platinum
catalyst. Izv. AN SSSR. Ser.khim. no.7:1307-1312 Jl '63.
(MIRA 16:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Hydrocarbons)   (Hydrogenation)
(Platinum catalysts)

s/020/63/148/001/022/032
B144/B186

AUTHORS: Gonikberg, M.G., Prokhorova, N.I., Litvin, Ye.F.

TITLE: Effect of high pressure on the structural trend of
             tert-butyl benzene phenylation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 1, 1963, 105-108

TEXT: The phenylation of tert-butyl benzene with benzoyl peroxide under
various pressures was studied to confirm the assumption that an increase
in pressure increases the portion of ortho-isomer, which is supported by
various publications. The method by J.I. Cadogan et al. (J. Chem. Soc.,
1954, 3352) using atmospheric pressure was repeated. The isomer mixture,
however, was separated by gas - liquid chromatography in a column, 2 m
long and of 5 mm diameter, containing 15% polyethylene glycol adipinate
on diatomite at 170°C, with helium serving as gas carrier (50 ml/min).
The material of the reaction vessel (glass, steel) did not affect the
isomer mixture. The total yield of 42.6% was approximately equal to
Cadogan's value whereas the 2-isomer proportion was lower (17% as
compared to 24%). The absence of secondary reactions of tert-butyl

Card 1/3

Effect of high pressure on the ...

S/020/63/148/001/022/032
B144/B186

diphenyls was proved by the constant composition of the isomer mixture during the individual stages of reaction. Experiments at a pressure of 2000 kg/cm^2 yielded 23.1% 2-isomer. The use of lead ampoules increased the yield in 2-isomer by 2% at atmospheric pressure and also at 2000 kg/cm^2. At a pressure of 4000 kg/cm^2, the yield in 2-isomer was 28.3%, at 6000 kg/cm^2 it was ~30%. Results: An increase from atmospheric pressure to 6000 kg/cm^2 caused: (1) An increase in ratio 2-isomer : (3 + 4) isomers by more than 70%; (2) doubling of the 2 : 4 isomer ratio; (3) slight increase in the 3 : 4 isomer ratio. Conclusions: A pressure increase may affect the structural development of the reaction by accelerating the formation of the isomer in direction of the steric hindrance. The change in the 2 : 4 isomer ratio at increasing pressure may be calculated from $\partial \log ([2]/[4])/\partial P = \Delta \Delta V^*/RT$, where [2] and [4] are the concentrations of 2-tert-butyl diphenyl and 4-tert-butyl diphenyl, respectively, and V^* is the volume change when 1 mole of the active complex is obtained from the initial particles. So far, the effect of Pb on the isomer composition has not been explained. There are 2 tables.

Card 2/3

Effect of high pressure on the ...

S/020/63/148/001/022/032
B144/B186

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR (Institute of Organic Chemistry imeni
N. D. Zelinskiy of the Academy of Sciences USSR)

PRESENTED: September 15, 1962, by B. A. Kazanskiy, Academician

SUBMITTED: September 5, 1962

Card 3/3

FREYDLIN, L.Kh.; LITVIN, Ye.F.; CHURSINA, V.M.

Stage mechanism underlying the reduction of β-nitrostyrene in an acid medium on Pd black. Dokl. AN SSSR 155 no. 5:1144-1147 Ap '64.   (MIRA 17:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
Predstavleno akademikom A.A.Balandinym.

FREYDLIN, L. Kh.; LITVIN, Ye.F.; ANANYEV, ...

Investigating the hydrogenation of olefins and dienes in the presence of rhodium black. Neftekhimiia 4 no.2:185-189 Mr-Ap'64.
(MIRA 17:8)

1. Institut organicheskoy khimii AN SSSR imeni N.D. Zelinskogo.

FREYDLIN, L.Kh.; NAZAROVA, N.M.; LITVIN, Ye.F.; GAYVORONSKAYA, G.K.

Reaction of cyclohexane with 3-methylbutene-1 and 2-methyl-
butadiene-1,3. Neftekhimiia 4 no.2:246-251 Mr-Ap'64
(MIRA 17:8)

1. Institut organicheskoy khimii AN SSSR imeni Zelinskogo.

PRAYLIN, L.Kh.; LITVIN, Ye.F.; SHEFTER, .M.

Hydrogenation of isoprene and 2,4-dimethylbutadiene-1,3 on a
skeleton cobalt catalyst. Neftekhimia 4 no.4:953-957 Jl-Ag
'64.
                                                    (MIRA 17:10)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

FREYDLIN, L.Kh.; LITVIN, Ye.F.; SHAFRAN, R.N.

Liquid phase hydrogeration and irreversible catalysis of cyclohexene on a skeletal ..ickel catalyst. Izv. AN SSSR. Ser. khim. no.8:1407-1411 Ag '64.   (MIRA 17:9)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

FREYDLIN, L.Kh.; LITVIN, Yu.F.; LOZANOVSKIY, L.

Conversions of cyclohexene in the presence of a skeleton nickel catalyst.
Neftekhimiia 4 no.5:687-690 S-O '64.

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN S.Sh.

FREYDLIN, L.Kh.; LITVIN, Ye.F.; SHAFRAN, R.I.

Hydrogenation of dienes with a system of conjugated double bonds on a skeleton Co-catalyst". Neftekhimiia 4 no.:459-465 '64.

(MIRA 18:2)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.

FREYDLIN, L.Kh.; LITVIN, Ye.F.; LYU GUAN-JUN [Liu Kuang-chun]

Hydrogenation of 2,3 dimethylbutadiene with hydrogen sorbed
in a skeletal nickel catalyst. Izv. AN SSSR Ser. khim. no.1:
134-140 '65. (MIRA 18:4)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

SHLYAPNIKOV, S.V., KARPEYSKIY, M.Ya.; LITVIN, Ye.F.

Use of gas-liquid chromatography for the separation of some
amino acids. Biokhimiia 28 no.4:664-67; Jl-Ag, '63.
                                                    (MIRA 16:9)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii i
Institut organicheskoy khimii AN SSSR, Moskva.

FREYDLIN, L.Kh.; LITVIN, Ye.F.

Mechanism of the hydrogenation of dienes with conjugate double
bonds on a palladium catalyst. Neftekhimia 4 no.3:374-378 My-Je
'64.   (MIRA 18:2)

1. Institut organicheskoy khimii AN SSSR im. N.D.Zelinskogo.

BATSANOV, S.S.;LITVIN, Yu.A.

Reaction of copper thiocyanate and halogens. Izv. Sib. otd. AN
SSSR no.9:63-67 '59   (MIRA 13:3)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR.
    (Copper thiocyanate) (Halides)

BATSANOV, S.S., LISOI, Yu.A.

Interaction of cuprous thiocyanate with halogens. Izv. SO AN SSSR no.3:103-? '63.

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR.

34131
S/138/62/000/002/001/009
A051/A126

/5. 9201
AUTHORS: Litvin, Yu.A.; Nepyshnevkiy, V.M.; Sinayskiy, G.M.

TITLE: Viscosity change of the reacting mass in isoprene polymerization

PERIODICAL: Kauchuk i rezina, no. 2, 1962, 1 - 4

TEXT: Results of an investigation on the viscosity change of the react-
ing mass during isoprene rubber synthesis are submitted. The change is studied
with respect to the duration of polymerization, polymer content, isoprene supply
conditions and temperature. The isoprene polymerization was carried out in 3-
liter autoclaves made of 1X9T18H (1Kh9T18N) steel, with anchor type mixers. The
molecular weight of the polymer was determined according to the viscosimetric
method and calculated from the formula: $M = 5 + 1.162$ h, where h is the cha-
racteristic viscosity. The PB-2 (RV-2) rotational viscosimeter was used for
continuous measurement of the viscosity. The viscosity of the ПH-6 (PN-6) ca-
librating liquid was measured with a Kepler rheoviscosimeter. Experiments
showed that one of the main factors determining the absolute viscosity of the
reacting mass is the concentration of the monomer. The absolute viscosity does
not exceed 30 - 40 poise and coincides with the viscosities of solutions in the

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34131
S/138/62/000/002/001/009
A051/A126

Viscosity change of the reacting mass in ....

same concentrations of natural rubber and stabilized synthetic isoprene rubber, with a polymer content in the reacting mass of up to 6 - 17% by weight. With further concentration of the polymer, the viscosity of the reacting mass sharply increases, reaching values exceeding 1,000 poise at 20% by weight. The concentration dependence of the viscosity of the synthetic isoprene and natural rubber solutions is the same within the range of up to 20%. For concentrations of the synthetic isoprene rubber solutions in n-heptane of 10, 15 and 20%, the viscosity in the temperature interval -5 + + 45°C decreases by a factor of 2 - 2.3. There are 7 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The reference to the most recent English-language publication reads as follows: C.T. Winchester, Natsyn Pilot Plant Ind. a. Eng. Chem. 51, no. 2, 97 (1959).

ASSOCIATION: Voronezhskiy filial vsesoyuznogo nauchno-issledovatel'skogo insti-
tuta sinteticheskogo kauchuka (Voronezh Branch of the All-Union
Scientific Research Institute of Synthetic Rubber)

Card 2/2

LITVIN, Yu.A.; NEPYSHNEVSKIY, V.M.; SINAYSKIY, G.M.

Change in visosity of a reactive mass in the process of
isoprene polymerization. Kauch.i rez. 21 no.2:1-4 F '62.
(MIRA 15:2)

1. Voronezhskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta sinteticheskogo kauchuka.
(Isoprene)   (Polymerization)   (Viscosity)

KNORR, KLAUS; LITVIN, Z.V. [translator]; GOLANSKIY. M.M., kand.ekonom.nauk
[translator]; KAMUSHER, K.G. [translator]; KAZAKOV, V.M. [translator];
GANTMAN, V.I., kand.yurid.nauk, red.; ZHEREBTSOV, L.P., red.;
KONOVALOVA, Ye.K., tekhn.red.

[The war potential of nations] Voennyi potentsial gosudarstv. Moskva,
Voen.izd-vo M-va obor.SSSR, 1960. 392 p.   (MIRA 13:10)
     (Armaments)   (War--Economic aspects)

SOLODOVNIKOV, V.G., glav. red.; KHRAMELASHVILI, V.N., zam. glav. red.;
        GOLANSKIY, M.M., red.; DIKANSKIY, M.G., red.; KAMUSHER, K.G.,
        red.; LITVIN, Z.V., red.; PITUNI, L.A., red.; CHERNYSHEV, P.M.,
        red.; SHAPIRO, A.I., red.; SHEVCHENKO, G.N., tekhn. red.;
        GUSEVA, A.P., tekhn. red.

        [International economic organizations; handbook] Mezhdunarod-
        nye ekonomicheskie organizatsii; spravochnik. 2., dop. izd.
        Moskva, Izd-vo Akad. nauk SSSR, 1962. 1108 p.   (MIRA 15:2)

        1. Akademiya nauk SSSR. Institut mirovoy ekonomiki i mezhduna-
        rodnykh otnosheniy.
                (International agencies--Handbooks, manuals, etc.)

LITVIN-MAKSYUTA, K.M.; GOSTISHCHEV, K.P.; KRYSENKO, N.S.; POLYAKOVA, M.N.; ZUBENKO, K.L.; KOZACHENKO, V.K.; VASIL'YEVA, R.M.

Regeneration of xanthate from cobalt cake. TSvet. met. 38 no.6:44-45 Je '65.   (MIRA 18:10)

LITVIN-MAKSYUTA, K.M.; KRYSENKO, N.S.; GOSTISHCHEV, K.P.

Regeneration of sodium xanthogenate from cobalt xanthate sinter
cakes. TSvet. met. 35 no.5:78-80 My '62.   (MIRA 16:5)
                (Nonferrous metals—Metallurgy) (Xanthic acid)

LITVIN-MAKSYUTA, K.M.; KRYSENKO, N.S.; GOSTISHCHEV, K.P.

Obtaining a cobalt concentrate from a cobaltic xanthate cake.
Zhur. prikl. khim. 36 no.5:1135-1136 My '63.   (MIRA 16:8)

(Cobalt)   (Power metallurgy)

LITVIN-SEDOY, M.Z.

Bulgakov, B. V., and Litvin-Sedoi, M. Z. On a problem of automatic regulation with nonlinear characteristic. Avtomatika i Telemehanika 10, 329–341 (1949). (Russian)

Let φ, θ be coordinates for the basic system to be regulated and ζ a coordinate for the regulator (servomotor). Let the basic differential equations be

$$T\ddot{\varphi} + U'\dot{\varphi} + k\theta + \zeta = 0,$$
$$S\dot{\theta} + \theta = S\dot{\varphi},$$
$$\Gamma\ddot{\varphi} + X\dot{\varphi} + l\varphi - \zeta/m = \psi.$$

Here $\Pi(\psi)$, the characteristic of the servomotor, is a nonlinear function very close to a broken line made up of a vertical segment upwards from the origin followed by an infinite horizontal ray to the right. The other latin letters are constants, all positive except X and k, and their physical significance is more or less indicated by the equations. Since $H(\psi)$ is small the author replaces it by another function written $\mu H(\psi)$, μ small. He then applies the perturbation method and discusses the self-oscillations of the system and their amplitudes and stability for μ small. The effects produced by varying the parameters of the servomotor are also considered [see B. V. Bulgakov, Appl. Math. Mech. [Akad. Nauk SSSR. Prikl. Mat. Mech.] 6, 263–280 (1942); 10, 313–332 (1946); these Rev. 4, 147; 8, 207].

S. Lefschetz (Princeton, N. J.).

...redaktor; VILLENEVA, A.V., tekhnicheskiy redaktor.

[Correcting circuits in automatic regulation; collection of progressive articles] Korrektiruiushchie tsepi v avtomatike; sbornik perevodov statei. Moskva, Izd-vo inostrannoi lit-ry, 1954. 519 p.   (MLRA 8:1)
(Electric circuits) (Automatic control)

LITVIN-SEDOY, M.Z., redaktor [translator]; GERMOGENOV, A.V., redaktor;
SHAPOVALOV, V.I., tekhnicheskiy redaktor

[Automatic and manual control; papers contributed to the conference
at Cranfield, 1951. Translated from the English] Avtomaticheskoe
regulirovanie; sbornik materialov konferentsii v Krenfelde, 1951 g.
Perevod s angliiskogo. Pod red. M.Z.Litvina-Sedogo. Moskva, Izd-vo
inostrannoi literatury, 1954. 555 p.   (MLRA 8:4)

1. Conference on Automatic Control, Cranfield, Eng., 1951.
        (Automatic control)

LITVIN- SEDOY, M. Z.

Litvin-Sedol, M. Z. On a complex gyroscopic effect. I~ F/W
Vestnik Moskov. Univ. 9, no. 10, 19-24 (1954). (Russian)

The system (which may have been suggested by guided-missile instrumentation) consists of $n+1$ symmetric gyros G_i of axis Ox_i $(i=0, 1, \cdots, n)$ and common fixed mass center O, G_i being constrained to revolve relative to G_{i-1} about Ox_i which is perpendicular to Ox_{i-1}. There are no external forces and no dissipation (G_i and G_{i-1} may be, respectively, the rotor and stator of an electric motor). After indicating how the expression for kinetic energy may be obtained by means of matrix multiplication, the paper turns to the case $n=2$, and covers more than one page with the underived equations of motion, stated in ill-advised notation and ridden with substantial misprints. Let θ, ψ, ϕ be the Euler angles for G_0, and ϕ_i the angular displacement of G_i relative to G_{i-1}. It can be verified, without computing the kinetic energy, that ϕ and ϕ_2 are cyclic, but ϕ_1 is not. For reasons unstated, the author starts a rather confused search for values of ϕ_1 which will make some of the angular accelerations θ, ψ, ϕ vanish instantaneously if ψ and ϕ do so. But, if the paper's corrected equations are correct, it is obvious that ψ, ϕ, ϕ_1, θ, ϕ_2 can vanish permanently provided that $(A_1-B_2)\theta \cos\phi_1 + A_2\psi_2 = 0$, A_1 being the axial, and B_1 the equatorial moment of inertia of G_1.   A. W. Wundheiler.

Chair applied Mechanics

SOV/124-58-1-79

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 8 (USSR)

AUTHOR: Litvin-Sedoy, M. Z.

TITLE: On the Stability of Periodic Motions of One Automatic-control System
(Ob ustoychivosti periodicheskikh dvizheniy odnoy sistemy avtomati-
cheskogo regulirovaniya)

PERIODICAL: Uch. zap. Mosk. un-ta, 1954, Nr 172, Mekhanika, Vol 5, pp 163-176

ABSTRACT: The author investigates the stability of self-excited ("hunting")
oscillations in an automatic-control system with a controller
characteristic

$$(Y^2 D^2 + XD + l)\, \phi - \psi = 0$$

$$(SD + 1)\, \vartheta - SD\, \phi = 0$$

$$D^2 W^2 (T^2 D + U)\, \phi + kWD\, \vartheta + h\psi = \mu\, \Phi(\psi)$$

The possible hunting ranges of such a system on the plane of the
parameters k, X of the controlled variable and the controller were
examined by B. V. Bulgakov and by the author (Avtomekhanika i

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On the Stability of Periodic Motions of One Automatic-control System

telemekhanika, 1949, Vol 10, Nr 5). In their study they investigated the hunting stability by means of period-averaging of the variables. The paper now under review is devoted to a substantiation of the possible applicability in the above-mentioned problem of the averaging method, for which purpose the author computes the free and linear terms by expansions according to powers of the small para- meter μ of the characteristic indices of the variational equations; the latter are set up with reference to the periodic solution of the system. The solution of the variational equations is set up, as usual, in the form of series according to powers of μ. The free terms and the coefficients of the first power in the expan- sions of the characteristic indices according to powers of μ are found as the solu- tions of homogeneous and, respectively, nonhomogeneous linear differential equa- tions with constant coefficients. It is shown that of the four Routh-Gurvits inequali- ties three are satisfied automatically for either oscillatory amplitude, whereas the sign of the fourth is found to be in accord with one of the two possible amplitudes, while it is opposite to the sign of the other amplitude. Here it is found that the expression of the fourth Routh-Gurvits criterion, as obtained from the linear eval- uation of the characteristic indices, and its expression as obtained by the averaging method, coincide in accuracy except for an essentially positive factor. The small- amplitude oscillation is unstable, the large-amplitude oscillation is stable.
Card 2/2   V. M. Starzhinskiy

LITVIN-SEDOY, M. Z.

242. Litvin-Sedoy, M. Z., The equations of motion of a body, each part of which has a single degree of relative freedom of motion (in Russian), Ucb. zap. Mosk. un-ta no. 172, Mechanics 5, 177-190, 1954; Ref. Zh. Mekh. no. 12, 1956, Rev. 8017.

The equations of motion are derived for a system of $s + 1$ bodies $(G_0, G_1, \ldots, G_s)$ on the following assumptions: (1) The system has applied linkages enabling rotation without slipping of each of the bodies $G_1, G_2, \ldots, G_s$ about one of the axes, immobile in the body G_0; (2) The angular displacements of the bodies $G_1, G_2, \ldots, G_s$ relatively to the body G_0, are not kinematically interrelated; (3) the masses of the bodies of the system are not interrelated; (4) the relative rotations of the body G_i $(i = 1, \ldots, s)$ are related to the internal forces in the system.

With an arbitrary distribution of the masses of the bodies in the system and similar arrangement of the axes of rotation in the fundamental body, the general equations of motion of the said body are derived. Particular cases are analyzed.

V. A. Sarychev

Courtesy Referativnyi Zhurnal, USSR
Translation, courtesy of Ministry of Supply, England

Distr: 4E1/1

44. Litvin-Sedoi, M. Z., Determination of static conditions of nonlinear systems of automatic control (in Russian), Tr. 2-go Vses. soveshch. po teorii avtomat. regulirovaniyu, vol. 2, Moscow-Leningrad Izd-vo Akad. Nauk SSSR, 1955, 523-530; Ref. Zh. Mekh. 1956, Rev. 4505.

LITVIN-SEDOY, M. Z.

Litvin-Sedoi, M. Z.   On the kinematics of the free motion of a right trihedron. Vestnik Moskov. Univ. 10 (1955), no. 10, 59-64. (Russian)

[It would be impractical to present the following personal impressions, and to use the notation of this paper.] Let B/A denote the orthogonal 3-by-3 matrix of the cosines of the angles between the axes of a right trihedron B and those of a congruent trihedron A of the same sense and the same origin O. Let N_i $(i=1, \cdots, n)$ be axes through O, the angle between N_i and N_{i+1} being λ_i. Let Q_i be an axis through O perpendicular to N_i and N_{i+1}, the angle between Q_i and Q_{i+1} being ϕ_i. Let A_i be the right trihedron $N_i P_i Q_i$. Then the basic result of the paper is:

$$ B/A = \sum_i \Phi_i \Lambda_i \quad (i=1, \cdots, n-1), $$

where Φ_i and Λ_i have, respectively, the rows:

$$ 1, 0, 0; \ 0, \cos \phi_i, \sin \phi_i; \ 0, -\sin \phi_i, \cos \phi_i; $$
$$ \cos \lambda_i, \sin \lambda_i, 0; \ -\sin \lambda_i, \cos \lambda_i, 0; \ 0, 0, 1. $$

[The prolixity of notation, the abundance of misprints, and various pranks of the printer's devil have discouraged the reviewer from delving deeper into the paper.]
                    A. W. Wundheiler (Chicago, Ill.).

LITVIN-SEDOY, M.Z., kandidat fiziko-matematicheskikh nauk; MIROSLAVLEV, Ye.N.,
    kandidat fiziko-matematicheskikh nauk, retsenzent; POPOVA, S.M.,
    tekhnicheskiy redaktor

[Hydraulic drive in automatic systems] Gidravlicheskii privod v
sistemakh avtomatiki. Moskva, Gos. nauchno-tekhn. izd-vo mashino-
stroit.lit-ry, 1956. 311 p.   (MIRA 10:2)
        (Automatic control)   (Hydraulic machinery)

M. Z. Litvinov - Sedoy

16(1)

AUTHORS: Skoryy, I.A., University Lecturer, and SOV/55-58-2-33/35
Kopytov, V.D., Scientific Assistant

TITLE: Lomonosov - Lectures 1957 at the Mechanical-Mathematical Faculty of Moscow State University (Lomonosovskiye chteniya 1957 goda na mekhaniko-matematicheskom fakul'tete MGU)

PERIODICAL: Vestnik Moskovskogo Universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1958 ,Nr 2,pp 241-246 (USSR)

ABSTRACT: The Lomonosov lectures 1957 took place from October 17 - October 31, 1957 and were dedicated the 40-th anniversary of the October revolution.

In the general meeting A.N. Kolmogorov, Academician spoke "On Approximative Representation of Functions of Several Variables by Superposition of Functions With Less Variables and ε-Entropy of Classes of Function". The lecture generalizes the results of Kolmogorov, A.G. Vitushkin, V.I. Arnol'd and V.M. Tikhomirov. The contents has been already published (Doklady Akademii nauk SSSR,114,5). Professor Kh.A.Rakhmatulin, Member of the Academy of Sciences of the Uz SSR, spoke on "Investigation of the Boundary Layer of the Motion of a two-Component Liquid".

The other lectures were given separately in the sections mechanics and mathematics. The following lectures were given.

1. Professor L.N. Sretenskiy, Corresponding Member, AS USSR : Propagation of Sound Waves From a Rotating Deformed Ball.
2. Professor G.G. Chernyy: The Flow Around Thin Truncated Bodies by Gas With High Supersonic Velocity.
3. Professor S.N. Nikiforov : Properties of the Calculation, Construction and Structure of Hydrotechnical Dikes on the Rivers of the Central Strip of the USSR.
4. Professor A.Ya. Sagomonyan : Penetration of a Rigid Body into the Ground.
5. M.Z. Litvinov-Sedoy, Senior Scientific Assistant : On the Synthesis of Control Circuits With Bounded Interval of Variation of the Controlled Variable.
6. V.A. Lomakin, Candidate of Physical-Mathematical Sciences : Scalar Plastic Metal Properties Under Variations of Structure.
7. Professor N.A. Slezkin : On Some Questions of the Flow Around Porous Walls.

Card 2/5

16(1),24(6)

AUTHOR: Litvin-Sedoy, M.Z.   SOV/155-58-3-24/37

TITLE: On the Geometry of the Gyroscopic Indicator for the Angular
               Position (K geometrii giroskopicheskikh datchikov uglovogo
               polozheniya)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki,
               1958, Nr 3, pp 119-126 (USSR)

ABSTRACT: Let an apparatus with two gyroscopes in Cardanic suspensions
               carry out an arbitrary spatial motion. Let the orientation of
               the gyroscopes and the position of the axes of the suspensions
               be arbitrary. At this model of a gyroscopic indicator the author
               investigates how its data are influenced by elastic deformations
               of the indicator. It is assumed: there exists a coordinate
               system with the property that material points lying on its axes,
               after the deformation lie on straight lines again. Under the
               given assumptions the author determines the absolute angular
               coordinates of the apparatus in motion as a function of the

Card 1/2

On the Geometry of the Gyroscopic Indicator for   SOV/155-58-3-24/37
the Angular Position

               three coordinates of the gyroscopic indicators. For an ideal
               performance and position of the indicators there result the
               formulas of L. Becker /Ref 7_7. The author mentions A.Yu.
               Ishlinskiy /Ref 1_7.
               There are 2 figures, and 7 references, 4 of which are Soviet,
               2 American, and 1 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
               (Moscow State University imeni M.V.Lomonosov)

SUBMITTED: April 28, 1958

Card 2/2

PHASE I BOOK EXPLOITATION   SOV/2036

Source: Prochnye tekhnicheskoye uchilishche imeni N. E. Baumana.
Mekhanika: sbornik statey (Mechanics; Collection of Articles) Moscow, Oborongiz,
1959, 119 p. (Series: Its: Trudy vyp. 92) 3,600 copies printed.
Errata slip inserted.

Ed. [Title page]: Y. V. Dobronravov, Doctor of Physical and Mathematical
Sciences, Professor, Ed. (Inside book): Ye. V. Latyrin, Engineer;
Ed. of Publishing House: L. I. Shpeydeyni Tech. Ed.: Y. P. Rozhin;
Managing Ed.: A. S. Izmaylov. Engineer.

PURPOSE: This book is intended for scientific and research personnel, engineers,
and students of advanced courses at instrument-making and machine design vuzes.

COVERAGE: This volume deals with problems frequently encountered in modern
instrument making and in designing specialized machines and includes general
theory of automatic control, vibrations, theoretical and applied gyroscopy,
stability of motion, etc. Abstracts of the individual articles are given
in the Table of Contents.

Mechanical Collection of Articles

Zmeyryev, G. I. [Assistant]. On a Method of Determining the Stability
Criterion for the Operation of Liquid-Fuel Rocket Engines   66
This paper investigates a timely problem in modern rocket technology,
namely, the problem of harmful fluctuation of pressure in the chamber
of a liquid-fuel rocket engine occurring during the combustion process.
The author investigates the entire hydraulic circuit supplying fuel to
the combustion chamber and determines the parameters required for sta-
bility of the process. References: 2 Soviet, 1 translation into
Russian.

Zakharov, Yu. V. [Research Fellow]. Determination of the Axial Hydrodynamic
Force of the Valve of Hydraulic Servomechanisms   85
This report considers the processes taking place inside the values of
hydraulic servomechanisms. The phenomena associated with the flow of
a viscous fluid inside a complex geometrical configuration with specific
boundary conditions are of great importance in the investigation of the
entire hydraulic servomechanism and,consequently, in setting up the
equations of motion of the whole automatic-control system. References:
2 Soviet, and 1 English.

SOV/2036

Mechanical Collection of Articles

**Livin-Sedoy, M. Y. [Candidate of Physical and Mathematical Sciences,
SHAF Scientist].** In the Department of Applied Mechanics at the Moscow
State University]. Determining Angular Orientation of a Body With
Gyroscope Pickoffs. When Arbitrary Distribution of the Axes of Their
Case Exist in a Body Moving in Three Dimensions   100
This paper presents results of use for a more rational calculation of
multi-gyroscope systems. References: 5 Soviet, 1 English, and
1 translation from English.

Termosheva, N. P. [Assistant]. Determination of the Minimum Dimensions
of a Cam Gear With a Rotating Cam and a Pivoted Feeler   100

Termosheva, N. P. [Assistant]. Calculation of the Optimum Profile of the
Cam of a Cam Gear With a Rotating Cam and a Feeler With Translational Motion   114
These reports contain original results of the author in the
search for optimum cam gears (in the sense of minimum dimensions and
some other requirements) for use in special machines.

AVAILABLE: Library of Congress

Card 4/6

S/147/59/000/04/010/020
E191/E481

AUTHOR: Litvin-Sedoy, M.Z.

TITLE: The Kinematics of Landing a Flying Machine on a
             Moving Platform

ABSTRACT: The flying machine may be an aeroplane or a
             helicopter which has a main body and a chassis with
             six degrees of freedom of relative motion between them.
             The relative motion may be intentional or forced due
             to deformations. The landing base also has a main body
             supporting the actual platform capable of motion with
             six degrees of freedom relative to the main base which
             may be the deck of a ship or a balloon carrier.
             Accordingly, apart from the coordinate system fixed in
             space, four coordinate systems are defined. The
             aircraft chassis may be defined by the instantaneous
             position of three independently displaceable landing
             wheels. Definitions of Euler angles are introduced to
             specify the angular position of the aircraft and the
Card 1/2   ship in space and other definitions for the relative

S/147/59/000/04/010/020
E191/E481

The Kinematics of Landing a Flying Machine on a Moving Platform

positions of the aircraft chassis and the ship's
platform and to state the linear and angular
velocities in space of the aircraft and ship. Single
point, two-point and three-point touch-down landings
are distinguished and an actual landing may have
different periods with different touch-down conditions.
The requirements of smooth landing are formulated for
the three types of touch-down. Matrix notation is used
and the advantages of this notation compared with
vector notation are pointed out. There are 6 figures
and 9 references, 5 of which are Soviet, 3 English and
1 French.

ASSOCIATION: Kafedra prikladnoy mekhaniki Moskovskiy gosudarstvennyy
             universitet (Chair of Applied Mechanics, Moscow State
             University)

SUBMITTED: April 30, 1959

Card 2/2

/./OOO

67593
SOV/179-59-5-13/41

AUTHOR: Litvin-Sedoy, M.Z.   (Moscow)

TITLE: Contribution to the Dynamics of a Gyroscope with Two
             Degrees of Freedom

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
             nauk, Mekhanika i mashinostroyeniye, 1959, Nr 5,
             pp 72-78 (USSR)

ABSTRACT: Gyroscopes with two degrees of freedom are used for
             measuring the absolute angular velocity of bodies such
             as aircraft. The static theory of the gyroscope with two
             degrees of freedom rests on the proposition that, at each
             instant, the deviation of the instrument frame from its
             reference position in the body (aircraft) is determined by
             its relative equilibrium under the action of the gyroscopic
             moment and the moment of the restoring force. It is
             stated that this proposition is acceptable to some extent
             when the gyroscopic device is used solely for the
             stabilization of the angular position of the body (aircraft)
             in space and when the disturbances acting on the body are
             relatively weak. When it is desired to control
             non-stationary angular motions of the body or when the
             disturbances are pronounced, the evaluation of the angular

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SOV/179-59-5-13/41

Contribution to the Dynamics of a Gyroscope with Two Degrees of
Freedom

velocity of the body by the static theory can lead to
noticeable errors and the appearance of false signals.
Moreover, the deviations of the geometry and mass
quantities of the device from its ideal (design) values,
which are found in real apparatus, cause additional
distortions in the results of measurements of the angular
velocity of the body. The conditions for the appearance
of false signals at arbitrary linear and angular
displacements of the body and the consequences of the
chief deviations of the real properties of the device
from its design are examined in the present paper.
The gyroscopic device under investigation has a rigid
gimbal frame. Its pivoting axis is neither necessarily
central nor a principal axis. The gyroscope and gimbal
axes are not perpendicular. The problem is formulated in
terms of finding three distinguished axes in the system,
namely the directions of the angular velocity vector of
the frame known as the axis of absolute insensitivity of
the gyroscope (when the frame does not respond to the
motion of the body whatever the variation of the angular

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Contribution to the Dynamics of a Gyroscope with Two Degrees of Freedom

velocity of the body, the angular velocity of the gyroscope and the components of the linear velocity of the origin of a coordinate frame tied to the body), the axis of transferable insensitivity (when the frame does not respond to the above quantities except the angular velocity of the gyroscope) and the axis of limited insensitivity (when the frame does not respond to some values of the above quantities but responds to others) respectively. An analysis is presented by which these axes can be found. It is shown that, under certain conditions, the frame of the device will rest in the aircraft performing a banked turn. In order to measure the three components of the angular velocity of the body (aircraft) it is necessary to instal three gyroscopes with two degrees of freedom each and also to introduce a computing system which evaluates these components by following a program determined by a system of three equations of the type of Eq (1). There are 3 figures and 3 Soviet references.

SUBMITTED: May 9, 1959

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LITVIN-SEDOY, M.Z., kand.fiz.-mat.nauk

Determining the angular position of a body by means of gyroscopic transmitters in case of arbitrary disposition of the axes of their cowlings in the body in spatial motion. [Trudy] MVTU no.92: 100-107 '59.

(Aerodynamics)   (MIRA 12:10)

S/179/60/000/02/021/032
E191/E281

AUTHOR: Litvin-Sedoy, M. Z .(Moscow)

TITLE: On the Control of the Angular Motion of a Body by
Means of Rotors

ABSTRACT: Referring to previous publications by the same author
and to R. E. Robertson (Ref 3), the control of a free
solid body is considered by means of auxiliary
solid bodies rotating about axes fixed in the free
body and driven by torques which are internal in
relation to the free body. The problem is that of
finding the required laws of variation of the angular
velocities of the rotating bodies such that a given
motion of the free body results. This prescribed
motion is expressed by the three Euler angles as

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On the Control of the Angular Motion of a Body by Means of
Rotors

functions of time. The resultant external moment on
the free body about the centre of mass of the system
is zero and therefore the total angular momentum
remains constant. Three rotating bodies are sufficient,
and the equations from which their speed variations
can be derived are given in this case by Eqs (3). A
special case is considered with three bodies which
rotate about the principal central axes of inertia of
the free body. At the initial instant of time the
rotors are in a state of relative rest. If the
assumption is made that one of the Euler angles remains
unchanged from the beginning, it follows that, in
order to make the body execute a given motion in
terms of the remaining two angles (angle of yaw and
angle of pitch) it is necessary to drive not only two
rotors but all three. The third rotor is needed to
compensate for the gyroscopic effects due to the

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16.9500 (1024,1031,1344)

S/024/60/000/005/011/...
E140/E435

AUTHOR: Litvin-Sedoy, M.Z. (Moscow)

TITLE: On Preassigned Bounds to Transient Processes in
            Automatic Control Systems q

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
            nauk, Energetika i avtomatika, 1960, No.5, pp.149-158

TEXT: This long "brief" communication considers one method of
synthesizing corrective networks for automatic control systems
in the general case non-linear.   The existence and uniqueness of
the solution are assumed.   The bounds considered are the limits of
segments in one of the system variables, which limits must not be
reached for all time exceeding a certain initial time,   The basi.
problem then consists in constructing a corrective network realizing
these limitations.   The problem is solved by a semi-indirect method.
by prescribing integrals and then finding the corrective network
characteristics on which these integrals depend,   The conditions
are expressed in such form that when the problem is satisfied
the time t is defined by a divergent integral (8)   If (8) does
not diverge the system will in fact reach the bounds prescribed in

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On Preassigned Bounds to Transient Processes in Automatic Control
Systems

finite time.   Then Eq.(11) must be satisfied.

$$F_a = \lim_{x \to a} \frac{a - x}{F(x)} \neq 0, \qquad F_b = \lim_{x \to b} \frac{b - x}{F(x)} \neq 0 \qquad (11)$$

The initial integrals are in fact the phase trajectories of the
corrective system with undetermined parameters which are found from
the criterion of divergence of the limit integrals.   While in the
general case these integrals depend on the initial point (initial
perturbation), condition (11) is valid over a certain continuum of
initial conditions.   The method assumes that a certain structure
for the corrective network is assigned.   The calculations may show
that this structure is unsuitable and certain suggestions are given
for a second approximation.   An example is given of the method which
can be verified by direct integration of the corrective system
equation.   There are 5 figures and 3 Soviet references.

SUBMITTED: May 24, 1960

Card 2/2

88415

13.2000

AUTHOR: Litvin - Sedoy, M.Z.

TITLE: On the Mechanics of Controlling Angular Motion of a Body by
Means of Rotors

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya I. Matematika,
mekhanika, 1960, No. 6, pp. 72 - 78

TEXT: The author reported on the contents of the paper on the First All-
Union Congress on Theoretical and Applied Mechanics on February 2, 1960.

The author considers a system (G) of rigid bodies consisting of a free
body G_0 and s kinematic chains of successively connected bodies

$$G_1^{(\sigma)}, \ G_2^{(\sigma)}, \ldots, \ G_{n\sigma}^{(\sigma)} \quad (\sigma = 1,2,\ldots,s).$$ The body $G_\nu^{(\sigma)}$ $(\nu = 2,\ldots,n_\sigma)$
has up to the three degrees of freedom with respect to $G_{\nu-1}^{(\sigma)}$, likewise

every body $G_1^{(\sigma)}$ with respect to G_0. The system is adapted for the con-
trolling of rotary motions of G_0, where the rotations of the $G_k^{(\sigma)}$ take

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C111/C222

On the Mechanics of Controlling Angular Motion of a Body by Means of Rotors

place only at the expense of the inner moments with respect to the system (G). The problem consists in the determination of those relative motions of the controlling bodies which guarantee the prescribed motion of G_0 in the space. It is assumed that the moment of the outer forces with respect to the center of mass of the system equals 0 . The problem is solved with the aid of the theorem of angular momentum. For the determination of the angular velocities of $G_k(\vec{b}')$ with respect to G_0 the author uses matrices by which the intermediate angular velocities are described. As an example for the application of the formulas written in matrix form the author considers a system of 5 bodies.

There are 2 figures and 5 references : 3 Soviet and 2 American.

ASSOCIATION: Kafedra prikladnoy mekhaniki (Chair of Applied Mechanics)

SUBMITTED: February 11, 1960

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87869

S/146/60/003/006/005/013
B012/B060

9.6100

AUTHOR: Litvin-Sedoy, M. Z.

TITLE: Determination of the Linear Acceleration of a Body at Any
              Position of Its Measuring Axes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye,
              1960, Vol. 3, No. 6, pp. 45 - 49

TEXT: When the linear acceleration of a given point in a body moving
about in an arbitrary manner is to be determined, errors arise for two
reasons: 1) due to the error arising in measuring and recalculating the
pickup position, and 2) due to the deviations of the measuring axes in
the body from the navigation axes. The latter errors have a purely geo-
metric origin. This geometric problem is investigated here. The compo-
nents of the linear acceleration of the body are assumed to be measured
at the three axes (the latter being not connected in any way with the
body and not parallel to any plane). The problem was to find the com-
ponents of acceleration at the axes of a fixed coordinate system, with
respect to which the body acceleration is measured. It is pointed out

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Determination of the Linear Acceleration of   S/146/60/003/006/005/013
a Body at Any Position of Its Measuring Axes B012/B060

that the solution of such a problem is specifically required to fix the
tolerances when assembling acceleration pickups in the apparatus. Two
coordinate systems: one (XYZ) fixed and the other (xyz) connected to the
body (navigation coordinate system) are introduced (Fig.2). The problem
is solved with the aid of linear transformations with matrices. Equa-
tions are obtained with the aid of which it is possible to calculate
the error of measurement due to the nonagreement of measuring axes and
navigation axes. The publication of this article was recommended by the
kafedra prikladnoy mekhaniki (Chair of Applied Mechanics). There are
2 figures and 12 references: 10 Soviet, 1 US, and 1 Rumanian.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova
              (Moscow State University imeni M.V. Lomoncsov)

SUBMITTED: May 6, 1960

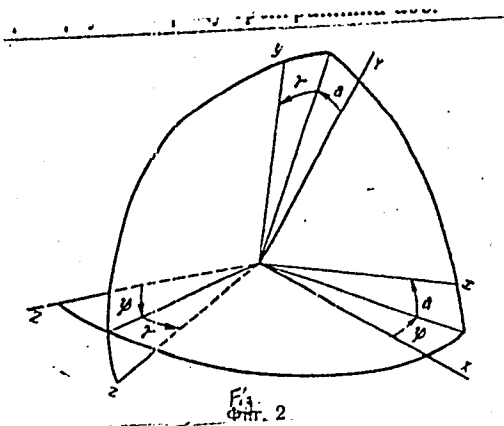Card 2/3

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B012/B060

Fig.2

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LITVIN-SEDOY, M. Z.

"On the synthesis of the correction chains in nonlinear oscillatory and control systems."

Paper presented at the Intl. Symposium on Nonlinear Vibrations, Kiev, USSR, 9-19 Sep 61

Moscow State University, Moscow

ATAROV, M.S.; BERNSHTEYN, A.S.; BUNIN, N.N.; VOL'NOV, I.I.; GINZBURG, V.A;
DANOVSKIY, N.F.; IVLEV, N.I.; KERZHENEVICH, Yu.B.; LITVIN-SEDOY,
M.Z.; MAYZEL', B.N.; ROTENBERG, G.I.; TYAGUNOVA, Z.I., red.;
PLAKSHE, L.Yu.; tekhn. red.

[Concise Italian-Russian polytechnic dictionary] Kratkii ital'iansko-
russki politekhnicheskii slovar'. Moskva, Glav.red.inostr. nauchno-
tekhn.slovarei Fizmatgiza, 1961. 378 p.   (MIRA 14:12)
    (Italian language—Dictionaries—Russian)
            (Technology—Dictionaries)

24538

S/179/61/000/002/003/01
E061/E135

/3,2522

AUTHOR: Litvin-Sedoy, M.Z.   (Moscow)

TITLE: Concerning a gyroscopic instrument for the
measurement of linear acceleration

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Mekhanika i mashinostroyeniye, 1961, No.2,
pp. 55-60

TEXT: A gyroscopic instrument for the measurement of linear
acceleration is described (see Fig.1). It consists of a fixed
frame 1 rigidly connected with the system, the acceleration of
which is to be measured. A casing 2 can rotate about an axis
fixed in frame 1. The casing carries a gyroscope with two
degrees of freedom, consisting of a frame 3 and a rotor 4. The
axis of precession of the gyroscope is fixed in the casing 2 and
is perpendicular to the axis of rotation of the casing in the frame
1. The point of intersection of these two axes is called the centre
of the mounting. When the centre of suspension moves in a
direction parallel to the input axis of the gyroscope, the frame
which is unbalanced produces a precession. This excites a servo

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Concerning a gyroscopic instrument.... E061/E135

system consisting of a pick-off x, amplifier 3 and motor 5. The servo motor rotates the casing 2 so that the gyroscope precesses to its original position in the casing. The instrument is designed for use on a stabilized platform but can be used in a system subject to angular motion if instrumentation is available to take account of it. The dynamic equations of the system are derived. It is shown that if the gyroscope is ideal, its angular velocity constant, the system moves in a straight line parallel to the input axis of the instrument without angular rotation, the instrument is not subject to gravity and starts from rest, then the velocity of the casing 2 is proportional to the acceleration measured. This forms the output of the instrument. The conditions under which the gyroscope is insensitive to trans- lational and angular motion are examined. The effects of oscillation about the axis of precession are analyzed. Expressions are obtained for the effects of the gravity on the instrument. It is shown that if the gravitational field is uniform over the instrument, then the instrument does not distinguish between the acceleration of motion and the acceleration due to gravity.

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Concerning a gyroscopic instrument... S/179/61/000/002/003/017
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Exact evaluation of the effects of gravity shows that they depend
not only on the position of the centre of mass but also on the
manner in which the mass of the gyroscopic system is distributed.
Thus, from two instruments with different mass distributions
mounted coaxially, a relation can be obtained between the angles of
precession of the gyroscope frames and the absolute coordinates of
the centres of suspension of the instruments. This relation is
independent of the acceleration measured.   Acknowledgments are
expressed to M.Ye. Temchenko for his comments.
There are 2 figures and 10 references: 7 Soviet and 3 English.
The English language references read as follows:
Ref.1: R.P.G. Collinson. Inertial Navigation, 1960. Flight,
        19 February, 1960.
Ref.9: John P. Vinti. New Method of Solution for Unretarded
        Satellite Orbits. J. Research of the National Bureau of
        Standards, V.63 B, No.2, Oct-Dec. 1959.
Ref.10: W.B. Klemperer and R.M.C. Baker. Satellite Libration.
        Astronautica Acta, 1957, V.3.
SUBMITTED: August 2, 1960

Card 3/4

LITVIN-SEDOY, M.Z. (Moskva)

Concerning the quality of automatically controlled stabilization of an unstable machine. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.4:168-173   Jl-Ag '61.   (MIRA 14:9)

(Automatic control)

/6,8000

S/055/61/000/005/004/004
D205/D303

AUTHORS: Litvin-Sedoy, M.Z., and Savvin, A.B.

TITLE: On synthesizing automatic control systems of the second or-
              der with a limitation of transition processes

PERIODICAL: Moscow. Universitet. Vestnik. Seriya I. Matematika, Mekhan-
              ika, no. 5, 1961, 77 - 83

TEXT: The case is considered when the investigated control syst-
em can be described by two differential equations of first order :
$\dot{x} = f(x,y)$, $\dot{y} = \varphi(x,y,\lambda)$, $\lambda = \lambda(x,y)$. The first equation describes the
object of control, the second - the controller λ is the characteristic of
the correcting link, assumed to be non-inertial. The functions f and φ are
known if the structure of the system is given. The author describes a me-
thod of finding λ based on the properties of integral curves. An example
is discussed in detail. There are 3 figures and 4 Soviet-bloc references.

SUBMITTED: January 19, 1961

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28813
S/147/61/000/003/002/017
E031/E335

16.8000 (1013)

AUTHOR: Litvin-Sedoy, M.Z.

TITLE: On the calculation of the kinetic energy of a system
            of linked bodies

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
              Aviatsionnaya tekhnika, no. 3, 1961, pp. 14 - 20

TEXT: When the motion of the system is controlled by a
combination of an open-loop regulation and a servo system, the
dynamics of the motion prescribed by the open loop becomes
important. The dynamics can conveniently be described by
Lagrange's second-order equations, for which the kinetic energy
of the system must be calculated. The kinetic energy is given
by the expression:

$$T = T_o + \sum_{\sigma=1}^{n} \sum_{\nu=1}^{n_\sigma} T_\nu^{(\sigma)}$$

where T_o is the kinetic energy of the main body, and
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On the calculation of ....

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$T_\nu^{(\sigma)}$ is that of the attached body $G_\nu^{(\sigma)}$.

This is developed in terms of the generalized coordinates and velocities of the main body and those in each kinematic chain. In the theory described, each chain attached to the main body is simple (s chains with n_σ bodies); however, the theory may be extended to the case of branching chains.
There are 3 figures and 7 Soviet references.

ASSOCIATION: Kafedra prikladnoy mekhaniki   (Department of Applied Mechanics)
Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: February 9, 1961

Card 2/2

LENSKIY, Viktor Stepanovich; LITVIN-SEDOY, Mikhail Zinov'yevich;
KAPUSTINA, V.S., red.; KOZLOVA, T.A., tekhn. red.

[Mechanics; course in mechanics offered by the Department of
Mechanics and Mathematics of Moscow State University] Mekhanika;
o spetsial'nosti "mekhanika" na mekhaniko-matematicheskom fa-
kul'tete Moskovskogo gosudarstvennogo universiteta. Moskva,
Izd-vo Mosk. univ., 1962. 41 p.   (MIRA 15:7)
            (Mechanics—Study and teaching)

LITVIN-SEDOY, Mikhail Zinov'yevich; KARAMYSHKIN, V.V., red.;
PERKOVSKAYA, G.Ye., red.izd-va; GOROKHOVA, S.S., tekhn.
red.

[Introduction to the mechanics of a controlled flight]Vve-
denie v mekhaniku upravliaemogo poleta. Moskva, Gos.izd-vo
"Vysshaia shkola," 1962. 211 p.   (MIRA 16:4)
                        (Instrument flying)

LITVIN-SEDOY, M. Z. (Senior Scientific Worker)

"Vibrations of a gyroscope pendulum with a movable suspension in a nonuni-
form gravitational field."

report presented at the Scientific-technical Conference on Modern Gyroscope
Technology Ministry of Higher and Secondary Special Education RSFSR, held
at the Leningrad Institute of Precision Mechanics and Optics, 20-24 November
1962.

Izv. vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 6, no. 2 1963

27335

S/024/62/000/002/006/012

E140/E135

16.9000

AUTHOR: Litvin-Sedoy, M.Z.   (Moscow)

TITLE: On limiting transient processes in multi-dimensional stationary automatic control systems

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i avtomatika, no.2, 1962, 115-123

TEXT: The introduction of nonlinear corrective networks into the amplifiers of nonlinear stationary automatic control systems supplies asymptotic stability and prescribed limitation of the oscillations in the controlled variable. A method of designing such corrective networks previously proposed by the author (Ref.1: Izv.AN SSSR, OTN, Energetika i avtomatika, no.5, 1960, and Ref.2: Izv.AN SSSR, OTN, Energetika i avtomatika, no.4, 1961) is here extended to the case of several regulated variables. If the input and output vectors, the error vector and the vector of all remaining variable quantities of a control system vanish with zero values of all arguments and if, when the elements of these vectors are found within certain bounds, the system

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E140/E135

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equations have a unique solution for each system of corrective functions continuous in a given region, and if the elements of these vectors are at least doubly differentiable in the same region, the functions are said to belong to the class (-). Then, if this is the case, it is required to construct the characteristics of the corrective networks such that if the initial values of the regulated variables are within certain limits, they will never exceed these same limits and tend asymptotically to zero. The control system is considered to operate in two steps, in the first of which each regulator operates to suppress independently the initial disturbance in the corresponding coordinate, until a certain instant t = T (not necessarily prescribed, but bounded), at which time the vector of regulated variables satisfies a certain condition. The corrective networks are then connected into the system. As an example, the author applies the method to the automatic stabilisation of the steady-state pressure of air compressed by a turbine compressor. The minimum speed of response of the power drive in the pressure control system is found which is

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